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Report of the Health Survey and Planning Committee, Volume II

APPENDICES

MINISTRY OF HEALTH   GOVERNMENT OF INDIA
NEW DELHI

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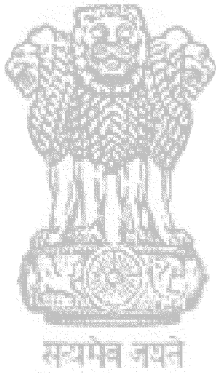

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PRINTED IN INDIA BY THE MANAGER GOVERNMENT OF INDIA PRESS
NASIK ROAD AND PUBLISHED BY THE MANAGER OF PUBLICATIONS DELHI-8
1962

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10		(a) Medical Aid in Plantations. (b) Population served by one Hospital, Hospital Bed, Doctor etc., in Plantations and in certain States.
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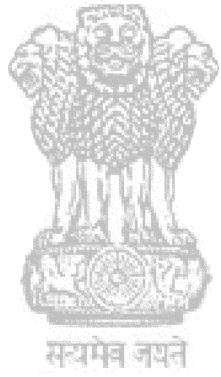
61		Post-graduate courses in Universities : No. admitted and qualified in various courses : (1950 and 1958).
62		The adaptation of Medical Education to expanding scientific knowledge.
63		ay scales of Teaching Sta of Medical Colleges.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6	Design of a public health laboratory.
7	Design of a 50-bedded infectious diseases hospital.
8	Incidence of leprosy (1958).
9	B.C.G. Vaccination up to March 1961.
10	Bed strength of T.B. hospitals, clinics and sanatoria.
11	Prevalence of Trachoma in the States.
12	Design of a Rural Sanitary Latrine.
13	Location of Medical Colleges in India (1960).
14	Number of registered nursing personnel : 1949 to 1960.
15	Number of qualified nursing personnel : 1949 to 1960.

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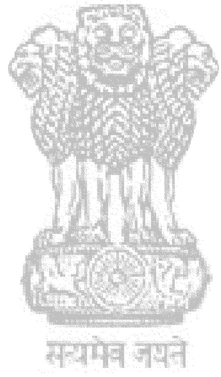
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Appendix 'D'

COPIES OF QUESTIONNAIRES ISSUED BY THE COMMITTEE

	Subject	To Whom Sent	Number	
			Addressed	Replies Received
1	Medical Relief (Urban and Rural).	States and Administrations	21	15
2	Expenditure on Health	States	15	11
3	*(a) Medical and Health facilities in Plantations.	Plantation Association and Chief Inspectors of Plantations.	26	22
	(b) Medical facilities in Public Projects & Coal Mines.	Project Administrations	10	10
	(c) Medical and Public Health facilities in Factories.	States and Administrations	21	20
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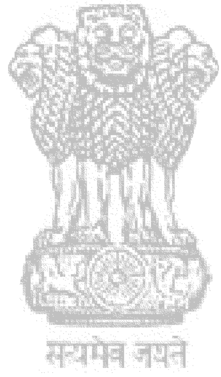
	(e) All India Health Legislation.	Medical and Professional Councils, ESI Corporation, Ministry of Health.	64	28
4	Medical Education and Research—			
	(a) Details of functioning of Medical Colleges.	Principals of Medical Colleges.	55	54
	(b) Post-graduate Courses	Universities	38	36
	(c) Medical Research Institutions.	Administrative Medical Officers	21	18
5	Drugs—			
	(a) Modern Medicine, Pharmacies etc.	(i) Pharmaceutical Industry.	267	175
		(ii) Medical and Pharmaceutical Profession	117	97
		(iii) Pharmaceutical Associations, Drugs Controllers and Directors of Health Services	34	21
	(b) Production of Hospital Appliances, Instruments etc.	Manufacturing Firms	106	78
6	Medical Colleges and Indigenous Medicine and Homeopathy.	Principals of the Colleges	91	66
		TOTAL	907	671

*Items of information sought through letters are reproduced.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Appendix (A)

MEMORANDA RECEIVED BY THE COMMITTEE

Medical Relief

1. Memorandum from Dr. V. M . Albuquerque regarding the Service System and the Panel System followed in E.S.I. Scheme.

2. Memorandum submitted by Dr. K. R. Masani regarding Psychiatry and Mental Health in India.

3. Memorandum from Dr. Mohan Lal regarding prevention of eye diseases.

4. Memorandum from the President, the Association of Medical Women in India.

5. Memorandum from Lt. Col. Barkat Narain regarding Primary Health Centres.

6. Note from Mr. William F. Vetter, Architect (Switzerland) on the suitability of Aluminium as a material for Hospital Building in tropics.

7. Memorandum by Dr. (Mrs.) Muthulakshmi Reddy regarding Cancer Institute (W.I.A.) Madras.

8. Notes by the Regional Office of the World Health Organisation.

9. Note from D. G., A.F.M.S. on "Co-operation between the Armed Forces and Medical Services".

10. Information furnished by Ministry of Education on the Welfare of the Handicapped.

11. Medical facilities available for the curable and incurable blind and suggested plans of development of facilities for treatment of the above—Memorandum by Dr. Mohan Lal of Aligarh.

12. Health in Third Five Year Plan—"Observations & recommendations" by the Indian Medical Association.

13. Note submitted on behalf of the Indian Council for Mental Hygiene by the Chairman of its Executive Committee, Dr. K. R. Masani.

14. Memorandum to the Health Survey & Planning Committee by the Adviser in Indigenous Systems of Medicine, Government of India, Ministry of Health, New Delhi.

15. Report of Dr. Ralph. G. Victor on "Medical Co-operatives"

Public Health Including Env. Hygiene

16. Note on the organisation of laboratory service in the State of U.P. in the Third Five Year Plan by Dr. V. S. Mangalik.

17. Appraisal of the Developments made up-to-date in regard to the Water Supply and Sanitation by Shri K. S. Krishnaswamy.

18. Memorandum on Occupational Health including Industrial Health by Dr. M. N. Gupta, Deputy Chief Adviser Factories (Medical).

19. Memorandum by Dr. K. T. Jungalwala.

20. Memorandum on 'Town and Country Planning' by Shri C. S. Chandrasekhara.

21. Review of the Registration system of births and deaths in India.

22. Memorandum from Dr. Sushila Nayar, M.P.

Communicable Diseases

23. A report on the control of Smallpox and Cholera in India.

24. A note on the malaria situation at present and the development since the Bhore Committee.

25. Note on "Central Leprosy teaching and Research Institute, Tirumani", by Dr. Dharmendra.

26. A preliminary note on Tuberculosis with a programme for the Third Five Year Plan.

27. Some suggestions regarding the teaching and control of Tuberculosis by Dr. J. L. Bhatia.

Professional Education & Research

28. Memorandum on Nursing prepared by the Trained Nurses Association of India.

29. Memorandum containing recommendations of the Orthopaedic Section of Association of Surgeons of India.

30. Memorandum containing views and suggestions of the Association of Physicians of India.

31. Memorandum on "Difficulties experienced at present in the actual working of the Indian Council of Medical Research Schemes of Research" and remedies suggested by Dr. S. Bhagvantam, Director, Indian Institute of Science, Bangalore.

32. Memorandum by the President, Association of Physicians in India.

33. Memorandum from Dr. Subodh Mittra, Director, Chittaranjan National Cancer Research, Calcutta.

34. Memorandum from the Association of Paediatricians of India, Bombay.

35. Memorandum from the Neurological Society of India, Bombay.

36. Memorandum from the Plastic Surgery Section of the Association of Surgeons in India.

37. Memorandum from the President, Indian Society of Anaesthetics Bombay.

38. Memorandum from the All India Ophthalmological Society.

39. Memorandum from Dr. R. Sundaram, Professor of Preventive and Social Medicine, Medical College, Trivandrum.

40. Memorandum by the Physiological Society of India and the Society of Experimental Medical Sciences, Calcutta.

41. Memorandum on Dental Health Service and Long term Planning submitted by the Dental Council of India.

42. Memorandum submitted by the Indian Medical Association.

43. Memorandum submitted by Dr. P. N. Wahi on Medical Research in India.

44. Letter from Dr. N. S. Narasimha Iyer, Professor of Madras Medical College, (Reg. P. G. education)

45. Memorandum from Dr. S. S. Manchanda regarding the present status of Paediatrics and some suggestions for its improvement.

46. Memorandum regarding development of the Institution for the training of Medical Graduates.

47. Memorandum on training programme and the possibility for increasing the trainees at the Demographic Training and Research Centre.

48. Note on establishment of Institutions for training refractionists and opticians.

49. Scheme for the establishment of Research Centre in the Sir C. J. Ophthalmic Hospital (J. J. Hospital, Bombay).

50. Note on the field programme for M.B.B.S. students in preventive and social medicine by Dr. N. Krishnan Tempi.

51. Note on the Activities and achievements of the National Laboratories under C.S.I.R.

52. Memorandum received from the Indian Radiological Association.

53. Report on visit to Departments of Preventive and Social Medicine by Dr. Carl E. Taylor.

54. Organisation of Medical Research in India—present position and some suggestions for future development.

55. Note on—Medical Education—India 1959—from South East Asia Regional Office W.H.O.

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56. Summary of Memorandum prepared by the Director, Central Institute of Research on indigenous system of medicine, Jamnagar on the activities of the Institute covering the period from March, 1954 to March, 1960.

Family Planning and Population Control

57. Memorandum on 'Demographic Studies' by Dr. S. Chandrasekher.

Drugs and Medical Stores Committee

58. Memorandum from the Government Medical Stores Officials Association, Madras.

59. Memorandum submitted by the Drugs Controller, India.

60. Memorandum submitted by Dr. C. S. Patel, Drugs Controller, Gujarat.

61. Memorandum submitted by Dr. Nadkarni, Drugs Controller, Maharashtra.

62. Note prepared by Directorate General of Health Services regarding the Medical Stores Organisation.

63. Progress made by the Pharmaceutical Industry upto the end of March, 1960.

64. List of drugs and Intermediates and their capacities to be set up in Drug Projects with U.S.S.R. collaboration.

65. Note regarding an estimate of the Machinery requirements for X-ray and Electro-Medical Equipment in the Third Plan Period submitted by the Ministry of Commerce and Industry, Development Wing, Instruments Directorate.

66. Extracts from the report of the Drugs Controller (India) on Drugs standard control for the year 1959-60.

67. A note by the Drug Controller, India, giving some suggestions for the better working of the Drugs Act.

Miscellaneous

68. Memorandum on Dental Health Service and Long term Planning submitted by the Dental Council of India.

69. Comments of Dr. John C. Hume, Chief Health Division United States, Technical Co-operation Mission to India before the Health Survey and Planning Committee, 22nd April, 1960.

70. Views and suggestions presented by UNICEF to the Health Survey and Planning Committee.

71. Memorandum submitted by the Indian Medical Association to the Health Survey and Planning Committe.

B-1

LIST OF PLACES VISITED AND PERSONS INTERVIEWED BY THE HEALTH SURVEY AND PLANNING COMMITTEE, ITS SUB-COMMITTEES AND GROUPS OF MEMBERS OF THE COMMITTEE.

Andhra Pradesh :

Visits :

1. Radium Institute & Cancer Hospital, Hyderabad.
2. Paediatric Centre and Niloufor Hospital, Hyderabad.
3. Nutrition Research Laboratories of ICMR, Hyderabad.
4. T. B. Hospital, Irrumnumma, Hyderabad.
5. Government Ayurvedic & Unani College and Hospitals, Hyderabad.
6. K. E. M. Hospital, Secunderabad.
7. Salar Jung Museum (History of Medicine Department).
8. Rural Health Centre, Pattancheru.
9. Biological Products Private Ltd., Hyderabad.
10. Rural Health Centre, Simmachalam.
11. Andhra Medical College and Hospital, Visakhapatnam.
12. District Hospital, Kakinada.
13. Primary Health Centre, near Visakhapatnam.
14. Nagarjunasagar Project.

Interviews and discussions :

Special Officer, Indian Medicine (Dr. V. Sastry).

Principal, Government Ayurvedic College (Dr. Divakaran).

Principal, Government Unani College (Hkm. Usuf Hussain Khan).

Research Officer Ayurveda (Dr. Mallikarjuna Rao).

Research Officer Unani (Mohd. Ali Khan).

Director of Public Health (Dr. C. R. Naidu).

The Chief Engineer, Public Health (Shri Venugopal).

Health Officers, Hyderabad and Secunderabad Corporations (Shri Gulam Ahmed & Shri S. R. K. Reddy).

Public Health Engineers of the two corporations.

Health Minister, Andhra Pradesh (Shri P. V. G. Raju).

Health Secretary (Shri L. N. Gupta).

Planning Secretary (Shri C. Narasimhan).

Principals of Medical Colleges and Superintendents of Hospitals.

Dr. Roy, the President of the Radiological Association of India.

T. B. Control Officers.

Nursing Superintendents.

Representatives of the Indian Medical Association, Andhra State Branch.

Deans of the Universities and the Director of the Upgraded Departments of Pathology at Visakhapatnam.

Interview with Family Planning Officers.

Representatives of the Employees State Insurance Corp., Regional office and I.N.T.U.C.

Faculty of the Andhra Medical College, Visakhapatnam.

Faculty of the Medical College, Kakinada.

Discussion with the Nursing Group.

Block Development Officers and Public Health Staff.

Representatives of the Indian Medical Association, Visakhapatnam Branch.

Assam, NEFA & Nagaland :

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Visits :

1. Visit to the two villages in NEFA named Robong and Yogrung.

2. Visit to T. B. Hospital, Passighat.

3. Visit to H. D. Sanatorium (Leprosy Colony, Passighat).

4. Visit to Health Unit at Viswema.

5. Visit to Naga Hospital, Kohima.

6. Visit to Kohima village, Maternity & Child Welfare Centre and Health Centre, Kohima.

7. Visit to American Mission Hospital, Kongpopki, Nagaland.

Discussions :

1. Discussion with the Political Officer, NEFA.

2. Discussion with the Assistant Director of Health Services and Staff of the General Hospital.

3. Discussion with the Officers of the Directorate of Health Services, Assam.

4. Discussion with the Adviser to Governor and others, NEFA and Nagaland, Shillong.

5. Discussion with the staff of the Naga Hospital, Kohima.

6. Discussion with G.O.C., Kohima.

7. Discussion with Commissioner, Kohima.

Bihar:

Visits:

1. Medical College, Patna.
2. Lady Health Visitors School, Patna.
3. Public Health Institute, Patna.
4. Government Ayurvedic College, Patna.
5. Ranchi Medical College & Hospital, Ranchi.
6. Primary Health Centre, Ormanshi.
7. Ancillary Nurse Midwife Training School, Ranchi.
8. Ranchi Mental Hospital, Ranchi.
9. Vaccine Institute.
10. Ramakrishna T. B. Sanatorium, Ranchi.
11. Durgapur Steel Plant.
12. Central Coalmines Hospital, Dhanbad.
13. Public Health Institute, Dhanbad.

Discussions:

1. Discussion with the Health Minister, Health Secretary, officer of Directorate of Health Services, Bihar.

2. Discussion with the Faculties of the Patna and Darbhanga Medical Colleges.

3. Discussion with the Indian Medical Association, Bihar State Branch.

4. Discussion with the Faculty of the Government Ayurvedic College, Patna.

5. Discussion with the Faculty of the Ranchi Medical College.

6. Discussion with the coalmines Welfare Fund authorities.

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Gujarat:

Visits:

1. Medical College, Ahmedabad.
2. L. M. College of Pharmacy, Ahmedabad.
3. Alembic Chemicals Works Company Ltd., Baroda.
4. Alembic Glass Works Ltd., Baroda.
5. Sarabhai Chemicals Ltd., Baroda.
6. Sanitex Chemical Industries, Baroda.
7. New building of the Drugs Laboratory.
8. Sarabhai Chemicals Research Institute, Ahmedabad.
9. Central Research Institute in I.S.M., Jamanagar.
10. Central Teaching Institute in I.S.M., Jamanagar.

Discussions:

1. Discussion with the Chief Minister, Gujarat.
2. Discussions with the Director of Medical Services and Director of Public Health, Gujarat.
3. Discussion with the Drugs Controller, Gujarat.
4. Discussion with the Principal and staff of the Central Teaching and Research Institute, Jamanagar.

Kerala:

Interviews & Discussions:

1. Shri V. P. R. Rao, Adviser to the Governor of Kerala.
2. Chief Secretary and Secretary, Health Department.
3. Discussion with the Faculty of the Trivandrum Medical College, Trivandrum.
4. Discussion with the officers of the Directorate of Health Services and Public Health Engineering organisation.
5. Discussion with Shri Nambiar, Principal of the College of Ayurveda, Trivandrum.
6. Dr. N. Krishnanthampi, Chief Medical Officer, Employees' Insurance Corporation.
7. Dr. Ananthan Pillai, Officer in charge of the Orientation Training Centre, Neyyanttinkara.
8. Dr. Menon, Director of Public Health Laboratory.
9. Indian Medical Association, Trivandrum Branch.

Visits:

1. Trivandrum Medical College, Trivandrum.
2. Secondary Health Centre, Neyyanttinkara.

3. Primary Health Centre, Vanapakal.
4. Primary Health Centre, Cheruvikkal.
5. T. B. Hospital, Polayanar Kottai.
6. College of Ayurveda.

Madhya Pradesh :

Visits :

1. Sultania Zanana Hospital, Bhopal.
2. Hamidia Hospital, Bhopal.
3. M.G.M. Medical College, Indore.
4. Maharaja Yashwantrao Hospital, Indore.
5. Prince Yashwant Rao Ayurvedic College, Indore.
6. Primary Health Centre, Ashta.
7. New Building of the Jabbalpore Medical College, Jabbalpore.
8. Field Training Centre, Natwara.

Discussions :

1. Discussion with the Faculty of the Bhopal Medical College.

2. Discussion with the Faculty of the M.G.M. Medical College.

3. Discussion with the Indore Branch of the Indian Medical Association.

4. Discussion with the Jabbalpore Branch of the I.M.A.

5. Discussion with the Secretary, Health Department, and officers of the Directorate of Health Services, and Directors in charge of M.C.W. and Family Planning.

6. Discussion with Dr. G. S. Choudhari, Member Board of Homeopathic and Biochemic Systems of Medicine.

7. Discussion with the Health Officer, Indore Municipal Corporation.

8. Discussion with the Principal, Prince Yashwant Rao Ayurvedic College.

9. School of Nursing, Indore.

10. Discussion with the Health Officer, Indore Municipal Corporation.

11. Discussion with the Faculty of the Jabbalpore Medical College.

12. Discussion with the Health Officer, Jabbalpore Municipal Corporation.

13. Discussion with the representatives of the Family Planning Association, Jabbalpore.

Madras :

Visits :

1. Domiciliary Chemo-therapy Centre, Madras.
2. Medical College, Madras.
3. Stanley Medical College, Madras.
4. Medical Store Depot, Madras.
5. Ayurvedic Co-operative Pharmacy, Madras.
6. Veneral Diseases Hospital, Madras.
7. Poonamalle Health Centre.
8. Christian Medical College and Hospital, Vellore.
9. College of Integrated Medicine, Madras.
10. King's Institute, Guindy.
11. B.C.G. Laboratory, Guindy.
12. Cancer Institute, Adyar.
13. Medical College, Madurai & Hospital attached to it.
14. Pilot Health Project, Gandhi Gram.
15. Community Development Block, Atur.
16. Family Planning Clinic Chinnalapatti.
17. Primary Health Centre, Chinnalapatti.

Discussions :

1. Minister for Health and the Health Secretary.

2. Discussions with Deans and Faculties of the Madras and Stanley Medical Colleges.

3. Discussion with Shri Kaiwar, Industries Secretary.

4. Discussion with representatives of the Madras State Branch of the Indian Medical Association.

5. Dr. Sarathy, Assistant Director of Health Services in charge of Drugs Control Organisation.

6. Dr. Jacob, Assistant Director in charge of Maternity and Child Welfare.

7. Dr. Vadamalayan, Consulting Surgeon.

8. Dr. A. Venugopal, Hony. Surgeon.

9. Dr. U. Mohan Rao, Hony. Surgeon.

10. Nursing Group consisting of Miss Kunjumen, Miss Gillespie, Mrs. C. Dawson etc.

11. District Medical Officers.

12. Discussion with the Faculty of the Christian Medical College.

13. Discussion with the Faculty of the College of Integrated Medicine, Madras and with some students of the college.

14. Shri R. A. Gopalaswami, I.C.S., Chief Secretary, Madras.

16. Dr. R. V. Rajan, Specialist in V. D. and formerly Principal, Madras Medical College.

16. Dr. P. E. Cherian, Chairman Legislative Assembly, Madras and formerly Principal, Medical College, Madras and Surgeon General to the Government of Madras.

17. Discussion with Faculty of the Madurai Medical College.

Maharashtra :

Visits :

1. Grant Medical College, Bombay.
2. G. S. Medical College, Bombay.
3. Nair Medical College, Bombay.
4. Dental College, Bombay.
5. Nair Dental College, Bombay.
6. All India Institute of Physical Medicine and Rehabilitation, Bombay.
7. Dispensaries of the Employees State Insurance Corporation.
8. Primary Health Centres on way to Poona.
9. Tata Memorial Cancer Hospital, Bombay.
10. Defence Services Limb Centre, Poona.
11. Burroughs Wellcome & Co. (India) Private Ltd., Bombay.
12. British Drug Houses (India) Private Ltd., Bombay.
13. Glaxo Laboratories (India) Private Ltd., Bombay.
14. May & Baker Ltd., Bombay.
15. Chemical Industrial & Pharmaceutical Laboratories, Bombay.
16. Government Medical Stores Depot, Bombay.
17. Anglo-French Drug Co. (Eastern) Ltd., Bombay.
18. Merck Sharpe Dohme of India Private Ltd., Bombay.
19. Dumex Private Ltd., Bombay.
20. Sigma Laboratories, Bombay.
21. Toddington Chemical Factory Ltd., Suren Road, Bombay.
22. Borosil Glass Factory, Bombay.
23. Hindustan Steel Works, Bombay.
24. Chemico-Pharma Laboratories Ltd.
25. Ciba Pharma Private Ltd., Bombay.
26. Roche Products Private Ltd., Bombay.

27. Hoechst Pharmaceuticals Private Ltd., Bombay.
28. Sandoz Products Private Ltd., Bombay.
29. Johnson and Johnson of India Private Ltd., Mulund.
30. MAC Laboratories Private Ltd.
31. Unichem Laboratories Ltd., Bombay.
32. Atul Drugs House and their factory.
33. Raptakos Brett & Co., Bombay.

Discussions :

1. Discussion with the Health and Deputy Health Minister and Officers of the Health Department and the Directorate of Health Services, Maharashtra.

2. Discussion with the Health Officers of the Bombay Municipal Corporation.

3. Discussion with the Representatives of the Bombay Branch of the Indian Medical Association.

4. Discussion with the Representatives of the Employees State Insurance Doctors.

5. Discussion with the representatives of the Family Planning Association.

6. Discussion with the Faculty of the G. S. Medical College.

7. Discussion with the Faculty of the Grant Medical College.

8. Discussion with the Faculty of the Nair Medical College.

9. Discussion with the senior staff of the Dental College.

10. Discussion with the senior staff of the Nair Dental College.

11. Interview with Dr. Jussawala, Secretary, Indian Cancer Society, Bombay.

12. Interview with Doctor Shiv Sharma, Pt. Hari Datt Shastri and Vaidya M. Y. Lele—Ayurvedic Pandits.

13. Interview with Dr. S. R. Wadia, Senior Hon. Physician, Government Homeopathic Hospital, Sion, Bombay and Dr. R. D. Joglikar, A.M.O., Government Homeopathic Hospital, Bombay.

14. Interview with Dr. A. J. Shelat, Chairman, Insured Medical Practitioners, Bombay.

15. Interview with Dr. R. D. Kamath, General Secretary, I.M.P. (A) Association.

16. Interview with Dr. A. D. Daftary, President, I.M.P.(A) Association.

17. Interview with Dr. Jangalwala, ex-member of the Bhore Committee.

18. Discussion with Drugs Controller, Bombay.

19. Discussion with Representatives of PAMDAL.

20. Discussion with Representatives of the All India Manufacturers' Organisation and Indian Chemical Manufacturers' Association.

21. Discussion with the Representatives of the All India Institute of Pharmacy Bombay.

Mysore:

Visits:

1. The Indian Institute of Sciences, Bangalore.
2. Bidadi Health Unit.
3. Ramanagaram Health & Training Centre.
4. All India Institute of Mental Health.
5. Medical College, Bangalore.
6. Primary Health Centres at Dommasandra, Ramsagar, Malur and Mulbagal.
7. Family Planning Clinic at Cavalry Road, Bangalore.

Discussions:

Faculties of the Bangalore Medical College and Mysore Medical College.

Officers of the Health Department and Directorate of Health Services.

Major General S. L. Bhatia.

Dr. T. Chandrasekhariaya, Retd. Director of Public Health.

Dr. Mahadevan, General Medical Practitioner.

Dr. Shivaram, General Medical Practitioner.

Sri Parthavaryan Pandit, Retired Medical Officer, J. C. Institute of Indian Medicine.

Sri Venkatanarayan, Assistant Director, Medical Services.

Sri K. R. Srikantamurthy, Principal, Government College of Indian Medicine, Mysore.

Orissa:

Discussions:

Discussion with the Health Secretary and Officers of the Health Department and Directorate of Health Services.

Discussion with the Faculty of the Medical College.

Visits:

Medical College.

Primary Health Centre near Bhubneswar

Punjab :

Institutions visited :

1. Primary Health Centre near Chandigarh.
2. Government Hospital, Chandigarh.
3. Medical College, Amritsar.
4. T. B. Sanatorium, Verar, Amritsar.
5. Dental College building under construction.
6. Health School, Amritsar.
7. Primary Health Centre near Amritsar.
8. Tuberculosis Hospital, Jullundhar.
9. Instruments Factories at Jullundhar.
10. Hospital of the Christian Medical College, Ludhiana.
11. Christian Medical College, Ludhiana.
12. Nursing School, Ludhiana.
13. Family Planning Centre, Khanna.

Persons interviewed :

1. Joint discussion with the Secretary, Department of Health, Director of Medical Education, Director of Health Services.
2. Chief Minister & Health Minister.
3. Discussion with the Faculty of the Patiala Medical College.
4. Discussion with the Faculty of the Amritsar Medical College.
5. Discussion with local branch of the Indian Medical Association.
6. Discussion with the Senior Nursing Staff of the Hospital of the Christian Medical College.

Rajasthan :

Visits :

1. T. B. Hospital, Bari.
2. General Hospital, Udaipur and rural health services around Nathdwara.
3. General Hospital, Udaipur.
4. Hospitals at Nathdwara.
5. Primary Health Centre, Naila.
6. S.M.S. Medical College, Jaipur.
7. Primary Health Centre, Shrinagar.
8. Primary Health Centre, Pisangan.

Discussions :

1. Discussion with District Officers of health, Superintendents of Hospitals and other officials of Health Department at Udaipur.

2. Discussion with the Faculty of the S.M.S. Medical College, Jaipur.

3. Discussion with Officers of the Health Department and Directorate of Health Services.

Uttar Pradesh :

Institutions visited :

1. The G. S. V. H. Medical College, Kanpur.
2. Dispensary of the Employees State Insurance Corporation at Kanpur.
3. Auxiliary Nurses Training Centre, Kanpur.
4. Factory of the Hind Chemicals, Kanpur.
5. Primary Health Centre, Kalyanpur (Kanpur).
6. V.H.M. and the Dufferin Hospital, Kanpur.
7. Primary Health Centre, Sarojini Nagar.
8. Balarampur Hospital, Lucknow.
9. K. G. Medical College, Lucknow.
10. Provincial Hygiene Institute, Lucknow.
11. Planning Research and Action Institute, Lucknow.
12. Rup Chemical Private Ltd., Lucknow.
13. Aurora Laboratories, Lucknow.
14. S.S.D. Gupta Hospital, Varanasi.
15. Medical College, Varanasi (formerly Ayurvedic College).
16. Sarojini Naidu Medical College, Agra.

Discussions :

1. Faculty of the G.S.V.H. Medical College, Kanpur.

2. Discussion with Shri Rostogi, new Minister in U.P. Cabinet.

3. Discussion with the organisers of the Sarojini Nagar, Primary Health Centre and students receiving training there.

4. Discussion with the Officers of the Directorate of Health Services at Lucknow.

5. Discussion with the Representatives of the U.P. State Branch of the Indian Medical Association, Lucknow.

6. Discussion with the Faculty of the K. G. Medical College, Lucknow.

7. Discussion with the management of the Hind Chemicals.

8. Discussion with the Faculty of the S.S.D. Gupta Hospital and College attached to it.

9. Discussion with the Faculty of the Sarojini Naidu Hospital and College, Agra.

West Bengal:

Visits:

1. All India Institute of Hygiene & Public Health, Calcutta.
2. School of Tropical Medicine, Calcutta.
3. Central Drugs Laboratory, Calcutta.
4. Serological Institute.
5. Chittaranjan Seva Sadan and Sisu Sadan.
6. Chittaranjan Cancer Research Institute.
7. Calcutta Medical College & Hospital.
8. Calcutta National Medical Institute.
9. Baripur Health Centre.
10. Hariharpur Health Centre.
11. Institute of Post-graduate Medical Research.
12. Institute of Child Health, Calcutta.
13. Dental College, Calcutta.
14. Rural Health Centre, Singur.
15. Union Health Centre, Nasibpur.
16. Urban Health Centre, Chetla.
17. Bengal Chemical & Pharmaceutical Works.
18. Bengal Immunity Co. Ltd.
19. Standard Pharmaceuticals.
20. Albert David Ltd.
21. Calcutta Chemical Co. Ltd.
22. Messrs Dey's Medical Stores & Private Ltd.
23. Messrs H. Mukherjee, Surgical Instruments, Bhownipur.
24. Messrs East India Pharmaceutical Works Ltd.
25. Bengal Immunity Research Institute.

Discussions:

1. Discussion with the Chief Minister, West Bengal at Calcutta.
2. Discussion with the Health Minister, West Bengal at Calcutta.
3. Discussion with the Development Commissioner.
4. Discussion with Officers of the Directorate of Health Services.

5. Discussion with the staff at the All India Institute of Hygiene and Public Health, Calcutta.

6. Interviews with the Deputy Chief Engineer, P.H.E. and other members of staff.

7. Interviews with officers of the Calcutta Corporation concerned with health services.

8. Discussion with the representatives of the West Bengal Branch of the Indian Medical Association.

9. Discussion with the representatives of the Drugs & Pharmaceutical Manufacturers Association, West Bengal.

10. Discussion with the Bengal Chemists & Druggists Association.

11. Discussion with Ayurvedayas and Homeopaths in Calcutta.

12. Discussion with principals and deans of medical colleges.

New Delhi :

Interviews & Discussions :

Dr. M. Freymann of Ford Foundation.

Representatives of the Delhi Medical Association.

Representatives of Delhi Administration (Health Services) and Corporation of Delhi.

Dr. K. G. Saxena, Homeopathic Practitioner & Hony. Physician to the President of India and Dr. Jai Chand, Homeopathic Practitioner.

Miss M. Korah, Superintendent, Lady Reading Health School and Miss Buchanan, Principal, College of Nursing, New Delhi.

Ayurvedic and Unani Practitioners.

Discussion with the Faculty of the A.I.I.M.S.

Discussion with the Faculty of the Lady Hardinge Medical College.

Discussion with the Faculty of the Maulana Azad Medical College.

Deans of Medical Colleges.

Representatives of the Delhi Family Planning Association.

Representatives of the U.S. Technical Co-operation Mission and Rockfeller Foundation.

Representatives of the World Health Organisation.

Mr. Paul Larsen of the UNICEF.

Members of Parliament.

Dr. M N Gupta, Deputy Chief Adviser of Factories.

Places visited :

1. All India Institute of Medical Sciences.
2. Lady Hardinge Medical College.
3. Maulana Azad Medical College.
4. Vallabh Bhai Patel Chest Institute.
5. Infectious Diseases Hospital, Delhi.
6. Malaria Institute of India.
7. Najafgarh Health Centre and visit to the adjoining village 'Surera'.

Interviews :

1. Dr. K. R. Nair ⎫
2. Shri R. B. Lal ⎭ Central Statistical Organisation.
3. Dr. C. Chandrasekaran, Demographic Training Centre, Bombay.
4. Dr. Sushila Nayar, M.P.
5. Shri P. N. Kirpal, Secretary, Education Ministry.
6. Dr. V. Ramakrishna, Director, C.H.E.B., Directorate General of Health Services.
7. Lady Dhanwanti Rama Rao, President, Family Planning Association, Bombay.
8. Mrs. Tara Ali Baig.
9. Shrimati S. Nigam, M.P.
10. Dr. (Mrs.) S. Bhatia, Adviser M.C.H., Dte. Genl. of Health Services, New Delhi.
11. Miss T. K. Adranwala, Adviser in Nursing, Dte. Genl. of Health Services.
12. Dr. N. V. C. Rao, Deputy Development Officer (Rubber), Ministry of Commerce & Industry, New Delhi.

सत्यमेव जयते

Appendix B-2

NAMES OF THE FOREIGN DELEGATES WHO ATTENDED THE 14TH WORLD HEALTH ASSEMBLY MEETING IN FEBRUARY 1961 AND INTERVIEWED BY THE COMMITTEE.

1. Dr. H. M. Penido, Superintendent, Special Service of Public Health, Brazil.
2. Dr. E. Aujaleu, Director General, Public Health, Ministry of Public Health, Paris.
3. Dr. S. Syman, Director General, Ministry of Health, Israel.
4. Dr. F. Garcia Sahchez, Director General of Health Services, Mexico.

5. Dr. Karl Evang, Director General of Health Service, Norway.
6. Sir Kenneth Cowan and Dr. Godber, of National Health Service, England & Scotland.
7. Dr. Djukanovic, Director, Federal Institute of Public Health, Yugoslavia.
8. His Excellency Dr. Sergie Kurashov, Minister for Health, USSR.
9. Dr. Cameron, Deputy Minister of National Health, Canada.
10. Dr. L. E. Burney, Director General of Health Services, U.S.A.
11. Dr. Arnold Sauter, Director of Health Services, Switzerland.

सत्यमेव जयते

Appendix B-3

(i) STATEMENT SHOWING THE WHO/UNICEF DIRECT ASSISTANCE GIVEN TO INDIA FROM 1951 TO 1958.

(Overall Expenditure for 1949 and 1950 is $ 178.208 and $ 242.447 respectively)

(Figures in U.S. Dollars)

	1951				1952				1953				1954			
	Regular	Technical assistance	UNICEF	Total	Regular	Technical assistance	UNICEF	Total	Regular	Technical assistance	UNICEF	Total	Regular	Technical assistance	UNICEF	Total
1. Education and Training	28,001	743	..	28,744	4,975	123,144	..	128,119	26,330	123,549	107,842	257,721	9,085	41,074	..	50,159
2. Communicable Disease	80,303	42,262	..	122,565	37,196	65,060	..	102,256	33,314	13,539	..	46,853	29,624	8,881	33,059	71,564
3 Maternity and Child Health	..	..	3,988	3,988	20,456	..	..	20,456	18,014	..	7,693	25,707	626	..	68,953	69,579
4. Public Health Administration	..	5,007	..	5,007	3,750	..	..	3,750	..	..	..	..	..	7,221	2,984	10,205
5. Environmental Sanitation	..	..	..	..	5,000	..	..	5,000	10,600	..	..	10,600	..	..	..	..
6. Health Education of the Public	..	..	..	..	..	..	..	..	12,093	..	..	12,093	3,500	..	..	3,500
7. Nutrition	..	..	..	..	..	..	..	..	..	..	..	..	1,200	..	..	1,200
8. Nursing	30,052	..	..	30,052	21,800	564	..	22,364	115,957	..	..	115,957	55,040	4,034	..	59,074
9. Population Studies	..	..	..	..	..	14,611	..	14,611	..	13,603	..	13,603	..	..	..	..
10. Others	96,314	..	27,651	123,965	34,812	49,249	29,371	113,432	3,159	62,559	14,300	80,108	62	..	..	62
TOTAL	234,670	48,012	31,639	314,321	127,989	252,628	29,371	409,988	219,467	213,250	129,835	552,552	99,137	61,210	104,996	264,343

	1955				1956				1957				1958			
	Regular	Technical assistance	UNICEF	Total	Regular	Technical assistance	UNICEF	Total	Regular	Technical assistance	UNICEF	Total	Regular	Technical assistance	UNICEF	Total
1 Education and Training	11,569	19,615	..	31,184	57,974	..	..	57,974	..	41,164	..	41,164	..	27,233	..	27,233
2. Communicable Diseases	28,639	70,835	28,803	128,277	52,793	177,323	3,801	233,917	88,443	114,656	..	203,099	85,429	90,843	15,30,024	18,06,296
3. Maternal and Child Health	76,554	11,461	74,885	162,900	163,283	75,194	64,177	302,654	103,796	100,035	27,664	231,495	42,844	4,554	22,779	70,177
4. Public Health Administration	4,999	1,519	..	6,518	12,191	8,411	152	20,754	..	12,722	..	12,722	132,901	74,547	..	207,448
5. Environmental Sanitation	..	7,391	..	7,391	..	38,043	..	38,043	..	44,846	..	44,846	9,845	1,03,010	..	112,855
6. Health Education of the Public	..	631	..	631	..	31,623	..	31,623	..	17,282	..	17,282	..	41,207	..	41,207
7. Nutrition	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8. Nursing	61,407	8,699	..	70,106	41,196	10,814	..	52,010	80,314	37,386	..	117,700	14,191	35,785	..	49,976
9. Population Studies; Family Planning	..	..	..	..	999	..	..	999	..	..	..	..	..	..	..	..
10. Others	14,193	..	..	14,193	22,625	..	..	22,625	48,495	3,172	..	51,667	46,782	3,080	..	49,862
TOTAL	197,361	120,151	103,688	421,200	351,061	341,408	68,130	760,599	321,048	371,263	27,664	719,975	331,992	480,259	15,52,803	23,65,054

(ii) STATEMENT SHOWING THE ASSISTANCE RECEIVED FROM ROCKFELLER FOUNDATION FROM 1950 TO 1958

Name of the Scheme	1950	1951	1952	1953	1954	1955	1956	1957	1958	Total
Education & Training . .	1	2	3	8	21	2	12	8	2	59 Fellowships.
Ford Foundation										
Education & Training . .	..	..	..	..	..	..	$ 72,333.00 Rs. 94,989.25 Rs. 154,699.12	Rs. 42,668.34	.. $ 22,776.20	$ 95,109.20 Rs. 292,356.71
Environmental Sanitation . .	..	..	..	..	..	..	..	Rs. 6,390.09 Rs. 204,226.69	Rs. 38,493.70	Rs. 44,883.79 Rs. 204,226.69

(iii) STATEMENT SHOWING ASSISTANCE RECEIVED FROM T. C. M. DURING 1950 TO 1958

Name of the Scheme	1950	1951	1952	1953	1954	1955	1956	1957	1958	Total
1. Education & Training	..	..	4F	6F	5F	$1836.40	$10363.56	$5343.47	2F $3287.25	17 Fellowships. $20830.68 for equipment.
2. Communicable Diseases.	..	..	2F	1F	..	—	..	2F	..	5 Fellowships.
3. Maternity & Child Hea'th.	..	..	..	3F	..	2F	..	..	..	5 Fellowships.
4. Public Health Administration.	..	..	4F	4F	2F	..	1F	..	..	11 Fellowships.
5. Environmental Sanitation.	..	..	..	..	..	..	$5,957,287.90	..	..	$5,957,287.90 for Material & Equipment.
6. Health Education	..	..	2F	..	1F	..	..	..	$7500	$7500, 3 Fellowships.
7. Nutrition	$68,400 $152,100	$545,800	2F	1F	..	..	..	..	3,000 short tons.	$220,500 equipment & skim powder. 3 Fellowships. 3,000 short tons of skim milk powder.
8. Other	..	..	..	4F	1F	6F	11F	..	..	22 Fellowships.

(iv) STATEMENT SHOWING ASSISTANCE RECEIVED FROM UNICEF DURING 1950 TO 1958

Name of Scheme	1950	1951	1952	1953	1954	1955	1956	1957	1958	Total
Education & Training	$75,000	$193,000	$382,000	$324,000	$247,900	..	$842,000	..	$389,000	Assistance for fellowships $2452,900.
Health Education	..	$33,000	..	..	..	..	..	..	..	$33,000
Nutrition	..	..	..	$64,000 (Milk powder) $225,000 for Dairy Plant	..	..	$ 210,000	$ 383,000	$726,00	$13,19,000 for feeding. $64,000 for milk powder. $225,000 Dairy Plant.
Drugs & Diet Supplies				Rs. 24,800.00 (From 1952-1959)						Rs. 248,000 from 1952-59.
Health Centres & Transport.	..	..	..	..	..	..	..	..	..	Rs. 9520.00 (Equipment from 1952-59). Rs. 63800 (Station Wagon Jeep Chevrolet Car) from 1952-59.
B.C.G. Programme & other T.B. measures.	$3,55,600 $3,28,300	$3,40,000 $14,400	$1,53,800 $ 47,600	$1,25,000 1,200	$1,77,000 ..	$80,000 ..	$52,000 131,000 144,000	$112,000 ..	.. —	$15,99,400 6,70,500.
Nursing & Midwifery	—	29F	—	—	32F	46F	—	54F	44F	205 Fellowships.
Maternity & Child Health.			Equipment worth Rs. 7,00,304 (from 1953-57)							Rs. 7,00,304 for equipment.
Public Administration				(From 1951 to 1958)						Rs. 38,1312.30.

Appendix B-4

(i) BIRTH AND DEATH RATES

(Per Thousand)

Period	Recorded Rate		Estimated Rate		Source
	Birth	Death	Birth	Death	
1891—1901*	33	31	46	44	*Bhore Committee Report, p. 154.
1901—1911*	37	33	49	43	
1911—1921*	37	34	48	47	
1921—1931	33	25	46.4	36.3	"Actuarial Report, 1931."
1931—1941	34	23	45.2	31.2	"Mortality Trends in India," S. P. Jain.
1941—1951	28	20	39.9	27.4	Central Statistical Organisation.
1951—1956	..	..	41.7	25.9	Central Statistical Organisation.
1956—1961	..	..	40.7	21.5	Central Statistical Organisation.

(ii) INFANTILE MORTALITY RATE AND EXPECTATION OF LIFE AT BIRTH

Period	Inf. Mort. Rate (per thousand live births)		Expectation of life at Birth		Source
	Males	Females	Males	Females	
1921—1931	248.7	232.3	26.91	26.56	"Actuarial Report 1931."
1931—1941	..	..	32.08	31.37	Kingoley Davis.
1941—1951	190.0*	175.0*	32.45†	31.66†	*"Mortality Trends in India," S. P. Jain. †Life Tables by 1951 Census Actuary.
1951—1956	161.4	146.7	37.76	37.49	Central Statistical Organisation.
1956—1961	142.3	127.9	41.68	42.06	Central Statistical Organisation.

Appendix B-5

HOSPITAL AND MEDICAL CARE ESTIMATES AND PROJECTIONS

Year	1960	1961	1966	1971	1976
1. Population . .	420,000,000	425,000,000	470,000,000	530,000,000	600,000,000
2. Total ill Daily .	8,400,000	8,500,000	9,400,000	10,600,000	12,000,000

Year	1960	1961	1966	1971	1976
3. Per cent . .	2%	2%	2%	2%	2%
4. Needing No Prof. Care . .	1,680,000	1,700,000	1,880,000	2,120,000	2,400,000
5. Per cent (of 2) .	20%	20%	20%	20%	20%
6. Needing Daily Domiciliary care	420,000	425,000	470,000	530,000	600,000
7. Per cent (of 2) .	5%	5%	5%	5%	5%
8. Needing Daily Out-Patient Care .	6,300,000	6,375,000	7,050,000	7,950,000	9,000,000
9. Per cent (of 2) .	75%	75%	75%	75%	75%
10. Given Daily Out-Patient Care .	205,000	255,000	325,500	477,000	630,000
11. Per cent (of 8) .	3%	4%	8%	6%	7%
12. Given Out-Patient Care Annually .	75,000,000	93,075,000	128,480,000	174,000,000	230,000,000
13. Needing Adm. to Hospital Daily .	21,000	25,500	87,600	53,000	60,000
14. Per cent (of 2) .	0.25%	0.3%	0.4%	0.5%	0.5%
15. Admitted to Hospital Daily .	12,000	13,600	18,800	31,800	55,200
16. Per cent (of 13)	57%	53%	50%	60%	90%
17. Annual Adm. to Hospital . .	4,380,000	4,964,000	6,862,000	11,607,000	19,710,000
18. Admissions Per 1,000 . .	10	12	14	22	33
19. Average No. Days Stay . . .	10	10	10	10	10
20. Total Beds . .	150,000	165,000	206,800	305,000	607,000
21. Beds for 1000 Population . .	0.36	0.36	0.44	0.66	1.0
22. Daily cost per Patient-Rupees .	7	8	9	10	12
23. Total Annual Operating Costs Crore . .	30	39	71	116	236
24. Annual Cost Construction Crore .	30	84	86	514	

Appendix B-6

Report on Medical Care Programs in India

By

Ralph G. Victor, M.D.

INTRODUCTION

This report is based on a two months' study tour in India during October and November 1958. During that period I travelled in West Bengal, Orissa, Delhi, Punjab, Bombay and Bombay State, Mysore, Bihar and the Uttar Pradesh. In most of these States talks were held with Government officials, doctors, members of cooperatives and generally informed people. The purpose of the trip has been to investigate the possibility of establishing self-help, prepayment medical care plans organized along cooperative principles, and to see what practical steps might be needed to encourage the establishment of such plans in India.

This report primarily is intended for the various persons in India with whom I had talks during the tour. These persons who are specialists or who are generally informed on the subject were kind enough to give some of their time and provide factual information from which I have formed my impressions. It is a pleasure to share these impressions with all of them. Some basic observations about the contemporary Indian scene which are my personal views have been omitted. Otherwise the impressions presented in many ways reflect the opinions expressed by many of the persons interviewed.

SPECIAL ROLE OF COOPERATIVES

Though there have been cooperatives in India for half a century, the great impetus for their formation has come since Independence. It was felt that through cooperative organizations and through loans from the Government, capital could be provided for more rapid economic development. In providing this capital, the Government insisted on strict control of cooperative societies, and in practically none of the societies the element of self-help and self-government was well established.

The total number of cooperative societies in India must run into the hundreds of thousands, most of them less than five years old. For instance, in the State of Bihar alone there are 25,000 registered cooperatives. There usually are credit societies at the village level, giving credit for small loans for land improvement, better seeds and fertilizer. Some of them have been formed for channelling some capital to the handicrafts; weavers, shoemakers, silversmiths. A few larger societies have been set up for marketing, stores and setting up sugar-cane factories. These societies are supervised, and often managed, by full-time government officials, (in Bihar alone there are several thousand) in the form of a special Minister on Co-operatives, his deputies, registrars, inspectors, etc. Most of the societies belong to a supposedly private federation (Bihar Co-operative Federation), but even there the chairman of the board of directors is a minister, and practically the entire budget is provided by the government, the paid officials are "on loan" from government and still on the government payroll.

Similar organizational patterns exist in other states. Thus it is important for an American to know that in general in India co-operatives are NOT private, NOT self-help, NOT self-governed and that, in general, members have little understanding and knowledge of the Rochdale principles. Any planning for medical co-operatives, based on the assumption that there already is a large constituency of co-operators in India, will quickly come to grief if these differences are not recognized.

At the present time the term "Co-operative" in India is used liberally for all kinds of enterprises. At times they have nothing to do with co-operatives at all. For instance, an otherwise highly intelligent "Minister of Co-operation" of one of the larger States proudly sent me to see his medical "co-operative", actually made up of 95 per cent Government financing and 100 per cent Government control. In my trips I was taken to several so-called "co-operative" medical ventures, but rarely was there any true element of member participation in the political or economic sense. I did attend an interesting conference at Mysore, where 1,100 delegates from throughout the State had met to discuss the new State legislation proposed in connection with Co-operatives. This was a more encouraging incident, since the members vigorously expressed themselves against the increasing power of Government and passed a variety of significant resolutions. Along the same line, the Prime Minister in Delhi earlier this year expressed himself strongly in favour of co-operatives and at the same time admitted that Government had made a mistake in permitting too much centralized control of the co-operatives. Mr. Nehru felt that the private co-operative organizations should be strengthened and should be given a large measure of indepenedence. Since then little has happened to lessen the power of the Government officials connected with co-oepratives, but there is continued discussion on this subject in the papers and in governmental meetings. Particularly during November 1958 the daily papers gave the problem of developing co-operatives and changing their basic structure much prominence, and there may be constructive changes in the years to come. Many people felt that elected or appointed officials, not necessarily government officials, abused their power. They would be dishonest in their business dealings, and mostly employ their own relatives. How prevalent dishonesty and nepotism are, could not be checked, but it seemed significant to encounter this attitude of distrust.

While the total picture at present is somewhat discouraging, at least to an American Co-operator, it nevertheless is quite possible that out of the co-operative movement in India may come significant direction and leadership in the further development of economic, social and political democracy in India during the next few decades. Any optimistic appraisal must be guarded. Much will depend on good educational programmes, on the political trends within India and further legislation freeing the co-operatives from the stranglehold of government.

PATTERNS OF MEDICAL PRACTICE

At the time of Independence, India found herself with a serious shortage of doctors and medical facilities. There has been too little time since then to overcome this shortage, though much progress has been made.

Essentially there are two types of medical practice, Governmental and private. Contrary to the pattern in the United States of America, in India a large number of doctors are willing to enter Government practice in spite of relatively low pay. There are several reasons for this. In the first place, after the young doctor graduates, he often finds himself with a large family dependent on him. Family members have helped him during his studies, but then expect him to be a provider himself and not to make further debts in buying equipment and setting up his own practice. Also, even among wealtheir young men, many prefer the security and the prestige of working for the Government.

After entering government service, the young doctor will usually be assigned to a dispensary. Here he will handle an enormous patient load. It is not at all unusual to expect a doctor to see in one morning 300 patients in four hours, quite possibly seven days a week—and an almost equally large load in the afternoon. Usually there is no time for the patient to relate his symptoms, or for the doctor to do more than the most superficial examination. Records on the patient not only are totally inadequate, but usually are filed by date rather than by patient's name, and there is no real follow-up. The doctor works with inadequate equipment and usually without the help of laboratory examinations. He will be given a fixed annual budget for drugs. This is so inadequate that often almost worthless mixtures are given; their value will be less than a few cents per patient per visit. In most States the doctor will be allowed private practice, outside his regular hours, in order to supplement his income. Very gradually this permission for outside practice is abolished, but this cannot be done without raising the doctor's pay.

Doctors in private practice usually prefer working in cities or more attractive towns. If the doctor is a general practitioner, his degree will be that of M.B.B.S. Usually he will not charge for an office visit as such, but will charge for the medicine which he himself is selling. This is an important point to remember because it will affect some of the planning to be discussed later. If he is a consultant, with several years of special training and with an M.D. degree, he will see fewer patients, charge for the visits and send his prescriptions to the durg store.

As far as I know, there are no reliable statistics on *income for doctors* in private practice, though, of course, the income of government doctors is known as far as their salaries are concerned. There are enormous regional differences, and also marked difference between rural and urban areas, and partly this is related to regional economic conditions and partly to the supply of doctors. Here first are a few representative figures (Reference "Health on the March 1948-1957"—West Bengal, Directorate of Health Services) on the distribution of doctors:

Number of people served by one doctor (allopathic)

For India as a whole (1954 figure)	5324
For all of West Bengal (1957 figure)	1545
For urban centres in West Bengal (mostly Calcutta).	667

Because of their great number, many physicians in private practice in Calcutta may only earn a few hundred rupees a month; in Mangalore, where I inquired, and in Patna the figure may be much closer to five hundred rupees* a month and, in some of the more prosperous rural areas with a poor supply of doctors, it may be just below one thousand rupees. Of course, there will be extremes above and below. Government salaries, including indirect benefits for housing and pensions, will usually be just below five hundred rupees for a doctor five to ten years after graduation, in some States considerably less. Many specialists in private practice will earn between one and two thousand rupees a month.

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*One rupee approximately is worth U. S. $ 0.20. (twenty cents).

In addition to the *allopathic system of practice,* there are homeopaths, nature healers, faith healers, all kinds of quacks and the practitioners using the Ayurvedic system of medicine. The latter has obtained some special recognition, because some recently introduced drugs (e.g., rauwolfia serpentina) were based on durgs in use in that system. However, just about all of the healers in the above categories have no knowledge of diagnostic medicine, only rarely use properly standardized preparations and cannot be considered trained doctors by modern standards. Their number is very great, usually exceeds that of the number of allopathic doctors. In Patna, (Bihar) there are about 600 regular doctors versus 4,000 of the other groups. (reference: Personal communication by President, Bihar Chapter, Indian Medical Council.). In Calcutta, the ratio is about half and half. In the villages, the allopathic doctors are far in the minority.

Why do so many people go to *non-allopathic practitioners*? To a large extent, the blame for this must fall on the allopathic practitioners and on their method of practice. Because doctors in India are overworked, because they themselves, in spite of their training, rarely examine a patient before prescribing and finally because the medical mixtures prescribed often are nearly useless, village people often do not have much confidence in that system. True the governmental dispensaries are free, but this free medical care is a myth not a reality. In case of a real illness (if it is recognized), the patient will be given a prescription to buy medicine, and he will go to an outside drug store to have it filled. These prescriptions usually are quite expensive in terms of people's income and may be worth several days' wages.

People who would not normally use the free governmental dispensaries also may prefer the non-allopathic systems. It is much cheaper to go to an ayurvedic healer, or a homeopath—the remedy suggested may cost one-tenth of a supposedly comparable allopathic remedy. Even some people of intelligence and with upper middle-class income told me that for most of their families' illnesses, they used these healers. "Only if somebody is very sick, will we see a regular physician." Many of these healers are much better psychologists than the regular physicians; some of their remedies for the chronic minor illnesses, such as gastric distress or chronic cough, may easily hold their own with the allopathic patent medicines. Also, the non-allopathic healers have often been wise enough to include, in their list of drugs, modern antibiotics. Apart from the economic reasons for preference with regard to the type of doctor chosen, there also are the less definable reasons of faith or superstition, found in all cultures, when people are sick.

Because of people's economic condition, lack of education and possibly because of previous experiences, people are very slow in seeking medical aid, when *early recognition of disease* might have made treatment fairly easy. Doctors found this a great handicap in their practices, but at the same time complained—and this seemed almost in contradiction to the first observation—that too many people come with minor, insignificant illnesses and that their presence interfered with the care of the sick patients. An analysis of classification of patients' reason for visiting doctors shows some differences if compared with the prevalent pattern in the U.S.A. There are more patients with acute fevers, respiratory infections and intestinal difficulties, many fewer patients with degenerative diseases or malignancies. This pattern will probably change during the next few decades, as life expectancy, now only half that of the U.S., will increase.

Great progress has been made in a short time with *preventive measures* against malaria, smallpox, cholera and a few other diseases. But the concept of preventive medical care for the individual, consisting of routine physical checks and surveys, has not taken hold as yet, perhaps mostly because of the limited supply of doctors.

Since few people have cars, and since communications are rather laborious, patients usually will choose a doctor in their own neighbourhood, and will expect him to make home visits much more frequently than American doctors, under similar illnesses, would be expected to make. People have some sense of loyalty to their family doctor; in the larger cities, however, they seem to be rather unsentimental about changing. Also, in more serious illnesses or illnesses which at least seem to be serious, there is little reluctance of seeing several doctors of several different schools, even including a priest, at the same time, and to use all the remedies at once. In rural communities, and to some extent in the cities, women patients are reluctant to permit examination by a male doctor, except above the neck level. Male obstetricians are practically unknown. In small rural places this requires the presence of a midwife for assisting the doctor in his work.

For any future planning, it would be important to have some ideas of the *average medical expenses of a family* in India. Many villagers and some people in cities were questioned on that point and the answers, as could be expected, varied widely and may not be of much use. By medical expenses, all expenses incurred in connection with illness must be included. The best sampling was possible in a few rural areas of Bombay State and in the Punjab, and the answers for this varied from fifteen to thirty rupees annually of medical expenses per family per year. Fortunately, one set of statistics are available from West Bengal, collected in 1951 when the value of the rupee was some 30-50% lower than at present; it shows an annual expenditure of Rs. 11.—for the lowest income families, rapidly rising to above thirty for the next group. (Ref: Government of West Bengal, State Statistical Bureau "Family Budget Enquiry in 23 Towns of West Bengal including Calcutta 1950/51"—page 242.)

The family units average just below 6 members. The figures are for average monthly expenditures/family in rupees in 1951 :

Income (per month) :	Rs. 1-100,	101-200	201-350	351-700	701 & above.
Medical Expenses :	Rs. 0.92	2.88	6.81	14.51	52.32.

A somewhat similar figure for 1949/50 has been made available by the National Sample Survey; the estimate there is that the average medical expenditure per person per year is Rs. 1.77; this would mean Rs. 10.70 for a family of six, close to Rs. 15.00 at today's price level.

To appreciate the significance of these figures, we must know that the average family income in India is below Rs. 100 a month. Also, that these expenditures were incurred by families in a State which is advanced medically, and where governmental expenses for providing health care for the people are higher than in any other State (more than 15% of the state revenue in 1957/58, Rs. 3.40 per capita—three times more than in States like Orissa and Uttar Pradesh). Finally, and this was considered a most important point by many of the people talked to, medical expenditures are not budgeted; they almost invariably are *emergency expenditures.* The very fact that people spent the money does not mean that they could afford to, or that they would be prepared to spend the same amount on any plan of self-help medical insurance.

If some of the appraisal of present medical standards and practices in India seem critical, this is unavoidable just now. Many of the points raised are fully understood by responsible leaders in India, and constructive remedial steps have been initiated. Perhaps the most important of these are stricter requirements for licensing of doctors, and the ambitious plan to double the supply of doctors in less than 25 years. The *standards of medical training* are getting better quickly, and the intellectual level of young graduates is at least equal to young American doctor, since they are selected on a highly competitive basis. But the most essential quality in a doctor, at least in my opinion, that of a sympathetic and understanding friend, cannot be developed as long as the patient load is not reduced to a much lower daily level.

Finally, in thinking about the future of medical practice, we must know the opinion expressed practically unanimously by government officials and other leaders. Government feels committed to provide free and adequate medical care to all the people as soon as possible. There is a steady and rapid increase of the number of doctors in government service, many hospitals are being built, there is a marked rate of increase in the number of nurses and midwives trained and then employed by government and, some time within the next five to seven years, every rural area in the country of "thana" size (average population about 60,000 usually) is scheduled to have a *primary health centre* with one doctor in attendance and another visiting the villages by rotation. About one third of the thanas have been staffed in this manner already; this is part of the gigantic Community Development Programme.

ANALYSIS OF SOME MEDICAL PLANS IN OPERATION

Many medical care plans were visited and inspected and a few representative ones will be described.

Government Plans:

Throughout India, both in the cities and in the rural districts, there are small dispensary units, staffed by government doctors, giving free medical care to the people. In most divisions and sub-divisions, there are also government hospitals. As previously mentioned, in general the care is inadequate. The doctors are tremendously overworked and, in spite of this in most States, are permitted additional private practice. All this has been discussed on previous pages.

For the past four years, a special plan to cover industrial workers has been in operation. This plan is called *"Employees' State Insurance Corporation"*. It covers nearly one million workers and is largely financed by the Central Government and, to a lesser extent, by the employers' and employees' periodical contributions on a sliding scale depending on a person's income. This medical care plan is associated with medical disability insurance. It usually enables the employees to receive half wages as sick benefit for up to 56 days in one current year, and for a somewhat longer period for tuberculosis and malignancies.

In some States the participating doctors are fulltime Government employees and, in some communities, notably in Calcutta and Bombay, the doctors work on a per capita basis. In that case, the doctor receives Rs. 6.50 per employee a year and is expected to give full medical attention in the dispensary or in the patient's home, and also to supply free simple medical mixtures. More expensive drugs usually can only be prescribed through consultants and the exact mechanism for this varies from State to State.

Through this plan, extensive statistics about frequency of visits, cost per patient and classification of diagnosis have been collected. The utilisation figures are high and a specific example of a large plan in Hyderabad gives approximately 5 patient services per day for each 100 patients enrolled. However, this includes hospitalised patients. Family care is to be introduced as soon as possible. The doctor ratio for the full-time plans approximately is one doctor per four to five thousand people. The panel doctors may look after 2000 subscribers, but will have their private practice in addition. The estimated cost of benefits received per family per year will be Rs. 40 and the present cost is Rs. 18 for covering a single employee-subscriber. Cost of drugs is approximately 25 per cent of the total budget and the administrative cost is 10 per cent.

Comment.—I had occasion to talk to many doctors about the scheme. At the present time nobody is very happy about this, neither the doctors nor the patients nor government. Most full-time doctors complained about the heavy work load and particularly about the large extent of malingering. Much of the physician's time is wasted in filling out the necessary forms for enabling the patient to receive sickness benefit. Both in Bombay and in Calcutta the panel system causes great unhappiness of patients because doctors supposedly are indifferent to their needs, treat them as if they were charity cases and do not show proper concern. In turn, the doctors complain that they are frequently summoned unnecessarily to patients' homes and that the patients made demands at inconvenient hours. When prescriptions are handled through panel doctors, the annual cost for drugs per person is about three rupees higher than in the plans where doctors are full-time. Since the annual capitation fee paid to the panel doctors requires them to provide free of charge the less expensive medications, they naturally prefer writing prescriptions for the more expensive drugs, which they do not have to provide out of their own stock.

My over-all impression of the present operation of these plans is not favourable. It is recognised that this is a new programme and that eventually much better care may be given. Perhaps the most important contribution these plans have made so far has been the discovery of many previously unrecognised cases of Tuberculosis. Case-finding among industrial workers has shown 11 cases per thousand. To these patients modern drugs often are made available. The possible cure and control of Tuberculosis among industrial workers is an encouraging development. Perhaps this alone already partly justifies these plans.

A somewhat different system sponsored by the Delhi Government is an operation for governmental employees at Delhi. This system is called *"Contributory Health Services Scheme"* and is available to all government employees. For the poorly paid employees, the monthly rate is only Re. 0.50 per month including care of the family, and the maximum contribution for highly paid government officials is about Rs. 12 per month. The doctors generally are government employeees, except for some consultants who give services on an hourly basis. The employees' contribution can meet 50 per cent of the cost.

Comment.—Here too is the problem of overcrowding and waiting and of the impersonal attitudes of the doctors, but there is less dissatisfaction than with the previously described scheme. The drug costs are very high and comprise more than 40 per cent of the total cost.

There are other instances of government-supported plans. One is the *"Contributory Health Centre"* in Hyderabad. This plan has 2800 families as members and was thought of as a self-help plan. Actually, 800 of the families are government employees and are covered free of charge. Other families pay Rs. 2 per family per month. There is no entrance fee. All drugs are included, even modern drugs, x-ray, laboratory, etc.

The plan was visited and the facilities are excellent. They include x-ray, a laboratory, physiotherapy and good general equipment.

Comment.—The morale of the doctors, all government employees, seemed to be low and they seemed discouraged. They stated that a family may join for a few months if somebody gets sick, and then they may leave again without paying further dues. The members never feel that this is "their" plan, and have no sense of participation. It simply is a convenient commodity. There are too many unreasonable demands for home visits. Particularly insulting to the doctors' self-esteem is the fact that many patients first visit their own family doctors. Then they come to the dispensary for getting their prescriptions approved, going only through the motions of asking for advice. The value of the prescribed drugs may be many times the amount covered by monthly payments. In spite of great shortcomings, this plan represents a real attempt of solving some of the problems of medical care through contributions of the members. Its most serious present defect is its failure of providing for eventual participation of the members and, in a smaller way, its failure to raise an entrance fee or have a waiting period before coverage can begin.

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Company-Sponsored Plans:

Apart from the new schemes introduced by the Government, a few companies have undertaken a programme of medical care on their own. The largest one is operated by TATA at Jamshedpur with 28,000 employees covered. I met the Medical Director but did not visit the plan. It is not contributory. The company apparently sets high standards and pays doctors well.

A more detailed study was possible of the plan operated by HINDUSTAN LEVER BROTHERS covering about 9,000 employees with 3,000 of these located at Bombay. The main emphasis is on industrial health. The plan provides dispensary care only, and all out-patient services are provided, including all drugs, X-rays and a comprehensive schedule of prophylactic vaccinations. One doctor is expected to care for about 2,000 employees. Family members are not covered. The doctors are well paid, starting at about 1,000 rupees per month and receive regular increments to more than double of this amount, their training level is that of general practitioners (M.B.B.S.) with special interest in industrial health. The doctor works 48 hours a week, and is not permitted private practice. 95% of the employees are men. The cost of drugs, vaccines and dressings to the company per patient per year is approximately rupees 12. In hiring doctors much attention seems to be paid to attractive personality traits.

In addition to the dispensary care programme started by the company, the employees have started a *self-help medical insurance programme*. The company has no control over this. It only contributes a small percentage of the total budget and gives accounting services free. The plan is voluntary and 92% of the eligible employees have joined it. It will slowly be expanded to the dependents at the cost of one rupee per dependent per month. The size of the contribution depends on the employee's income, and anybody earning not more than Rs. 400 per month may join. The average contribution per employed worker is about Rs. 2 per month, plus the contribution for dependents. At present each employee cannot enrol more than two dependents. Benefits are on a reimbursement basis. Some examples are, Rs. 3 per doctor visit, Rs. 15 per specialist visit, Rs. 2 per injection, 50% of cost of prescriptions, Rs. 6 per hospital day. However, the maximum payments per year is Rs. 200 per member. This plan was discussed with the local trade union leader, and he seemed enthusiastic about it.

Comment.—The plan provides for democratic organisation, provides for self-help, gives free choice of doctors and its only real shortcoming seems to be the marked limit of its benefits. True cost analysis will only be possible after the dependents have been covered for some time, since costs are lower than a similar plan would be in a company where free dispensary care is not available to the employees. A similar plan is in operation at the IMPERIAL CHEMICAL INDUSTRIES in Bombay and was discussed with one of their members. It too is on a self-help basis. 75% of the employees have joined. The maximum annual benefit per member is Rs. 300. Both plans have been able to build up some reserve funds.

Private Plans:

So far there are no plans in operation which fully satisfy the requirements of being self-supporting and democratically controlled. Certain ideal objectives must be kept in mind when these private plans are reviewed.

To meet ideal standards the following would be desirable:

(1) Level of medical care must be adequate, the doctors must be competent and must not be overworked.

(2) There must be evidence of continued growth and progress.

(3) Membership must be of sufficient size.

(4) There must be active participation of the members, and managing committees must be elected in a democratic fashion.

Practically none of the plans visited met these standards. Most of them did not operate on a sound basis.

Here is a description of a few of them:

1. **Coondapur Health Plan,** located at Coondapur, 80 miles north of Mangalore in Mysore. In this community a general co-operative had suspended operations a few years ago and a sum of Rs. 12,000 had been left in capital funds. With this as reserve capital, a medical co-operative health plan has been started and the bye-laws satisfy the requirements of democratic control. The benefits received are on a discount basis, some drugs are free because of a grant from the Community Project Administration and the membership fee is Rs. 6 per family per year. Actually only 50 families have joined and another 200 families were members through the previously operated store. The physician is paid by receiving one half of the fee collected and the society gets the other half. All members are entitled to one physical examination per year, a special feature providing some preventive care. Coondapur was not visited, but the local co-operative registrar came to Mangalore to discuss its operations with me.

Comments.—This plan shows some promise. The doctor is not full-time, members benefits mostly consist of discounts, so far too few people have joined.

2. **Maruthi Medical and Health Co-operative Society Ltd.,** Wanapathy Building at Hyderabad, Kacheguda, Hyderabad. Dr. R. G. Jurkar is the owner of the hospital and training centre there. Two years ago he decided on starting a pre-payment plan and this plan recently was registered under the Co-operative Act. The entrance fee for members is Rs. 100 and for this the coverage is fairly complete. Only very expensive drugs are excluded and only one house call per subscriber per month is permissible. **The monthly contri**butions are Rs. 10 per family of five. For a smaller fee patients can receive partial coverage. The plan now has 340 members but many of them not on a full basis.

Comments.—Dr Jurkar is making a very unique effort in that area. He is the managing director of the plan. Two doctors are working with him on a part-time basis. There is much opposition from local doctors. In studying his budget the main shortcoming seems to be that only 20% of the plan's income is spent on doctors' fees. The plan is used for training centre, hospital and for other expenses. It has been difficult to enroll members.

3. **Chattapur Dispensary Near Delhi,** operated by Indian Co-operative Union. This plan has been in operation for four years. It was helped through the interest of the Unitarian Service Committee of Canada. This organisation gave a health van and also some financial support. So far 250 families are recorded as members. They pay Re. 0.50 per family per month. People not joining pay only about Re. 0.06 per visit, but on the day I visited the plan, 75% of the patients using it were members. A retired doctor receives Rs. 300 per month and gives all services. He spends every morning in the dispensary and in the afternoon the health van will move around to visit about 10 villages during a week. At present only about 15% of the operating expenses are met by contributions. Village leadership seemed unusually active, but costs are particularly high because of the health van. The village leaders did not feel that the plan could ever be self-supporting.

Comment.—The difference between cost and size of contribution is still too great. Health van, though desirable, seems too expensive to operate.

4. **Kattapura Health Plan, Mysore State.**—This is a new society being registered under the Co-operative Act. Public minded citizens have made available more than 100,000 rupees worth of building and equipment, the Government of Mysore State gave Rs. 25,000 for providing electricity, water and some equipment and also offered loans for buildings for doctors and nurses' quarters. Supposedly one London-trained physician has agreed to come, and another second physician is being looked for. The managing committee consists of

community leaders, including two doctors from Belgaum, a nearby city. Some have been appointed to the board because they have given Rs. 5,000 or more by way of donations. A few seats on the managing committee will be made available to members who have given at least Rs. 25. 200 members have joined to-date, but many other co-operative societies in that area have expressed interest. No definite monthly fees have been decided upon. Care is to be rendered at cost and there may not be a prepayment scheme. The doctor in charge will be paid Rs. 1,000 per month and receive free quarter. He will not be allowed private practice.

Comment.—This plan shows some promise, but has not started actual functioning yet. Probably will not be on a pre-payment basis.

5. **Satlama Village Dispensary, Dist. Sambalpur, Orissa.**—This dispensary is located in one of 35 villages of a community development project operated by the American Friends Service Committee, in association with the Government of Orissa. The medical work done there for the last four or five years has covered many different fields. As far as pre-payment medical care is concerned, the pattern has been developed during the last two years. In one Panchayat area *i.e.*, Satlama, the doctor will hold sick calls one day a week. A trained health worker lives there and can give follow-up treatment. Domiciliary calls are not made. The basic plan has been to set up similar units in four additional areas, and to have families contribute about Rs. 4 to 6 per year. If this can be done and about 500 families will join in each Panchayat area, the income will be sufficient for paying a physician and the auxiliary staff. In Satlama 750 families have joined so far, but some families were not current with their dues. The village leaders were just getting ready to call on inactive members at the time of my visit. Only modern drugs are used and are sold at cost. This cost averages just below one rupee per prescription, the people do not seem to object to this.

Comments.—This plan offers some promise. The main immediate difficulty is uncertainty about the plans of the Government Community Development Project in that area. Since a Primary Health Centre has already been established and people have been promised Sub-centres, further self-help projects are undertaken reluctantly at this time.

6. **Co-operative Medical Aid and Self-help Societies in Punjab.**—Five of the societies were visited in Punjab villages. A few years ago the Punjab Health Department decided to make grants for the establishment of self-help societies. To-date 82 have been set up, supposedly an additional 34 have been set up through private efforts. Each village participating must contribute Rs. 600 per year, to be

raised locally through member subscriptions or donations. In turn, Government contributes approximately Rs. 900 in cash, and the salary of a midwife, approximately Rs. 800 per year. From the total income the Doctor is to be paid Rs. 100 per month, and medicines are to be given out. The medical co-operative is organised with byelaws providing for democratic elections of its managing board. The societies were inspected in detail at Madar Tehsil, Kalra, Bain, Nawanshar and Bhanopli.

Comment.—Though there are slight differences between the societies, and particularly the society at Kalra seemed above average, their general operational plan did not seem sound. The doctor's pay is very low and only retired physicians have been attracted to give the services. With one exception, the physicians seen seemed too old to inspire full confidence. In general, the societies are forced to give practically the same service to members and non-members and there is little incentive for joining. In one village fewer than 10% of the villagers had joined, and generally the degree of participation was poor. The drug budget is so low that for serious illness patients require special prescriptions to be filled by the nearest pharmacy. Often the cost of prescriptions filled there is between Rs. 5 and 10. Since other practitioners in that area also do not charge for office visits, but only for the drugs they themselves sell, people do not see why they should bother about using the dispensary.

Comment.—The Government's intention may have been good, but the plans are not well set up.

7. **Sriniketan Medical Co-operatives in West Bengal.**—These plans were not re-visited, since they were seen during my visit in 1956. But information of recent origin has been obtained indirectly. In this area several self-aid medical societies have been in existence for many years. They have failed to grow to a level where they could afford to pay a doctor adequately and be fully self-supporting. The numbers of families participating were relatively small and there were difficulties in making the people pay their dues, when they were well.

Comment.—One of the pioneer efforts in India. Too few families have joined to make it fully self-supporting. Doctor's training below level of M.B.B.S.

8. **Arogya Sahakari Mandal Ltd., Nadiad, Bombay State (near Baroda).**—This is an Ayurvedic medical plan, presently inactive. This plan had 90 family members paying Rs. 15 per family per year. For this the members of each family would get free medical care in the home or in the clinic, and get free drugs. This plan has been

subsidised from the income of an Ayurvedic Drug Company. In spite of the small pre-payment enrollment, last year 14,300 patients were seen. Non-members were only charged Re. 0.13, for seeing the practitioner and for the medication. The doctor's pay was Rs. 150 per month. The average cost per prescription per patient was only Re. 0.09.

Comment.—Note the low cost of drugs compared to allopathic prescriptions, only one tenth of the cost of drugs given out at Satlama, Orissa.

9. **Maha Gujerat Ayurvedic Medical Society, Nadiad, Bombay State (near Baroda).**—This is a medical plan, where Government contributes 50% of the total budget, and it is connected to an Ayurvedic Training Centre. There is some emphasis on preventive care, health education as well as family planning. Of the nine doctors employed, only two are Ayurvedic. This is a service plan for the community rather than a medical insurance plan. It has no prepayment features.

10. **Baroda Co-operative Medical Relief Society Ltd. at Baroda, Bombay State.**—This society has been in existence since 1946, at present there are 155 members with voting rights, because they have contributed at least Rs. 5 in share capital. In addition there are 120 ordinary members, who simply are paying annually dues of Rs. 3 per family per year, plus an entrance fee of Re. 1. Both ordinary members and share holding members receive the same medical benefits. These consist of medical care at a discount price of approximately one half of the regular fee for certain medications, dressings, injections and home visits. The same doctor, a licentiate, has been working for the society for 5½ years.

Growth in membership has been very slow. The doctor sees about 30 patients a day. Obviously, the society at the present time derives a considerable proportion of its income from non-members and other sources.

Comment.—The doctor made a good impression. Somewhat disappointing that membership has not grown further.

All the private plans are suffering from a relatively low membership, insufficient *per capita* contribution of its members and failure to give adequate recompense to the doctors.

GENERAL OPINIONS

Among the hundreds of individuals interviewed on this trip, certain opinions expressed by them showed considerable predominance. Practically without exception doctors, government officials and the general public were in agreement, that a good system of medical insurance with democratic control by its members might be a good thing to have. But though the objective might be desirable, many people, particularly government officials, felt that such a plan could not succeed in India. The most convincing argument—one difficult to refute—is the announced objective of the government to provide free medical care to all of its citizens. While it would be foolish to ignore the socialistic trends, there were some signs which might signify that there is some room for a continued weighing of alternatives. In an unofficial conference of three key people of three different ministries (Health, Community Development, Planning) there was full agreement that existing plans for medical care, even if fully carried out, still would leave large segments of the population with inadequate care and that self-help, pre-payment schemes might provide vital services.

There was almost universal agreement that "Indians are too poor and they cannot pay for medical care". Only few people thought, that a self-supporting medical plan could operate in rural areas. There was concern about the shortage of doctors, and scepticism that doctors could be found for plans in rural areas. There also was a feeling that an untried, experimental plan would not give the doctor any security and "Indians are very security-minded".

There were many *negative comments about doctors* in general, particularly that they are too far from the people and do not understand them. There was a general feeling, that Indians are not insurance-minded. For instance, taking out urban fire insurance still is done infrequently and the whole insurance field has been further discredited by the recent scandals of the National Life Insurance Scheme, (nevertheless their premium income has climbed).

Lack of dedication and even dishonesty of office holders in the co-operatives was criticised. Also there is the impression that few people really grasp the basic principles of democratic co-operatives.

Many people felt that it would not be wise to restrict medical care in co-operative medical plans to the allopathic system. But at the same time, they commented that the expenses for other systems usually were so much less, that the pre-payment principles might be hard to motivate.

The idea of *co-operative drug stores,* where drugs could be sold near cost, repeatedly was mentioned, and found much favour. But then the all-powerful government can pass a simple ordinance in West Bengal, fixing prices of all drugs with such a low level of profit allowed for the wholesaler (5%) and the retailer (12%) that cooperative drug stores would hardly offer any incentive. This ordinance was signed in Calcutta in November 1958. It may be difficult to enforce though.

One of the things difficult to assess, and frequently discussed, is the extent of *sense of social* responsibility to be found in India. By this is meant an awareness of the needs of others, as contrasted to one's own needs, and the willingness to act unselfishly and generously under certain conditions. It was generally felt that many Indians give generously in connection with religious functions and within their own families. At the same time, the prevalent opinion was that Indians are quite backward in their general sense of social responsibility, and tend to act with a certain narrow self-interest. Of course, there are exceptions. The Bhoodan workers, the inspired political workers with Ghandian convictions and certain religious groups would provide examples pointing in a different direction. But this negative trait might be a real disadvantage in a medical cooperative, where selfish and unreasonable demands of too many members would be a real burden.

In general, if people were at all positive in their advice to start medical cooperatives, they usually felt that these plans would most likely succeed in urban areas. If any were to be started in rural areas they should be set up in the more enlightened and economically advanced sections.

CAN ACTION BE RECOMMENDED ?

A realistic appraisal of all the factors known, forces the observer to the conclusion, that there is only little likelihood that consumer-sponsored, pre-payment medical cooperatives, run without government help or control, will have much of a chance of successful operation in India. The most important points, mostly already listed in greater detail before, supporting this opinion, are the following :

1. The socialistic trends within India.

2. The promise made by the government, in public, that health and education must be free for all the citizens.

3. The relative backwardness of the masses of India at this time : illiteracy, poverty, lack of social consciousness.

4. The absence of a "felt need" for this, except among small groups of city dwellers and perhaps a few rural areas—On the whole, the people want free care, not a contributory scheme.

5. The reluctance of physicians to practice in backward, rural areas.

It is possible then, in the light of these known factors, to justify the effort and expense needed of setting up medical cooperatives?

Even under more favourable conditions than those existing in India at present this may be a formidable undertaking; we may simply remind ourselves of the difficulties and failures encountered by some medical cooperatives in the U.S.A. Quite apart from the problem of medical care, why should anybody wish for growth of cooperatives and what are some of their potential strong points?

The greatest potential asset of a Democracy is its basic philosophy of enabling each citizen to develop as an individual according to his needs and abilities. This requires conscious participation of all citizens in the social, political and economic institutions surrounding him. The first cooperative on record in Rochdale, England, more than one hundred years ago, primarily was founded because of economic exploitation of the weavers and their attempt, by joint action, to strengthen their economic bargaining power. But with it, they immediately recognized, that responsible participation of members was needed, or a new form of exploitation might take the place of the old. Their early bye-laws provide us with ideal rules, still applicable to-day:

1. **One member—one vote,** regardless of the size of capital investment of that member. This differentiates a cooperative from a corporation, since in the latter the number of shares held determine strength, while in a cooperative no individual can control the others because of greater economic power.

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2. **No discrimination** because of race, creed or social position. Cooperatives must be open to all members of a community, and must be open on an equal basis.

3. **Regular meetings** to conduct and discuss the business of the cooperative. Elections of officers in a democratic fashion, preferably by secret ballot. The latter seems important, since otherwise some of the more powerful members of a community might be elected—landlords, money-lenders, employers—, because in an open election there would be reluctance to vote against them.

Some of the totalitarian countries, notably the Soviet Union and China have organized part of their economy by setting up large cooperatives. These may be fine institutions and they may have a good record of accomplishments, but though they bear the name of "Co-operative" they do not resemble the ideal to be set up in a democracy. The government has a controlling part in these, and only in the economic sense is there equality among the members. Politically they are restricted in their freedom and in their ability of making independent decisions.

Coming back to the challenge of helping in the establishment of medical cooperatives in India, we must be convinced that there would be good reasons for setting them up. We already know about some of the reasons why they may fail; we might argue in their favour for the following reasons:

1. Government cannot provide the level of medical care most people will want.

2. Most people cannot afford the fees of private practitioners.

3. Additional answers to the problem of medical care must be found, and medical cooperatives may offer a good solution.

4. Medical cooperatives may help in a better distribution of doctors, away from the large cities, since they may possibly be able to offer attractive working conditions for doctors at good pay.

A basis for positive action might be a conviction, bordering on faith, that through proper educational efforts and successful demonstration a new demand can be created.

To justify a medical cooperative then, it certainly must give better service than that provided by the Government, and it must be cheaper or better than what many private doctors have to offer. To ensure the following would be essential:

1. There must be a friendly and competent doctor, adequately paid, and preferably on a full-time basis.

2. The patient load must not be excessive.

3. The members must actively participate in the planning and management of the cooperative.

4. During the early phases of the plan, adequate finances must be available, even if initially new members are not acquired rapidly. Only with a budget guaranteed for several years will it be possible to induce doctors and auxiliary staff to join.

For any organization to sponsor these plans, adequate funds must be found to pay for the organisers and also to set up proper budget guarantees. If such funds are available through sources abroad or in India (possibly capital grants from government with no strings attached), then the setting up of medical cooperatives may be an exciting adventure to undertake.

Specific recommendations will follow. They are to be considered as theoretical guides. They are untested, and must be subjected to critical appraisal, and they may require considerable modifications.

RECOMMENDATIONS FOR SPECIFIC ACTION

The greatest need for better medical care is for the *rural population.* It is realised that there are great difficulties in setting up medical care plans of sufficiently high quality to offer a decided advantage over rural governmental dispensaries and to be at the same time within the economic ability of the villagers. A self-help plan might not be possible in the poorest and most backwards sections of the country. However, there are rural areas with a reasonable proportion of families of fair income, notably in cash crop areas with sugar cane, tobacco, cotton or in those areas where a canal system permits two to three crops per year. If local leadership is available, a plan might be set up—after careful preliminary exploration.

Probably few communities could meet expenses both for capital expenditures and for recurring expenditures. Therefore the first problem will be to secure necessary funds for essential *capital expenses.*

Here, the heaviest expense would be the setting up of buildings. Their cost may be anywhere between five and fifteen thousand rupees, depending on the local situation. It would be most advisable to attempt working through panchayats or through other local leadership in an attempt to get free use of existing buildings. These need not be elaborate. Secondly, and this will be discussed further below, a fund must be available for enabling a medical self-help plan to stock its own drugs and sell it at cost to the members. This revolving fund should be capitalised at about Rs. 1000, again depending on local circumstances and size of the group. Thirdly, some capital funds are needed for medical equipment and furniture. One to two thousand rupees should meet initial needs.

What kind of organisation should the medical self-help group be ? Because the use of the word 'cooperative' in a formal organisational title legally seems to be restricted to organisations registered under Cooperative Acts, it is not necessarily required that from their very inception all medical plans be labelled 'cooperatives'. *What is essential though is that plans provide for democratic control of its members and for free elections of all officers, preferably by secret ballot.*

Each member must have one vote, not related to size of capital investment except for a reasonable minimum. There must be no discriminations on account of caste, religion or communal group. The members must have a sense of participation, or the plan is likely to fail.

It seems essential that initially a paid manager or organiser, part-time or full-time, be available in order to help in the securing of new members and to accept responsibility for the business operation of the plan.

What shall be the *role of Government* in these plans? Some early pilot projects certainly should be set up entirely without governmental help. Eventually some help from Central or State Governments would be desirable. Why should government officials feel inclined to participate and what kind of persuasive arguments might be used to get their help? We should not be willing to accept their statements that "after all, government is or will very soon provide free medical care for the citizens". The present plans at best will only give lip-service to the political demands of the people. Actually the expected load for the employed government doctors is so great that they will have only a few seconds per patient, if people make use of the facilities. At the present time the ratio of patients to doctors in India is approximately 5,000 to 1. During the next 25 years the anticipated population growth is in excess of 2% per annum and the anticipated rate of increase of practising allopathic physicians is from the present number of 70,000 to 140,000. This means that in early 1980 the ratio of doctors to population will be just below one to four thousand (compared with the figure in Great Britain of about one to two thousand and in the United States of America of close to one to thousand at present). The present plans of Government are for gradual expansion of 'Primary Health Centres' to all rural Thana areas, comprising a population of about 60,000 each. For this population Government will make one or perhaps two doctors available, leaving at best a ratio of 1 to 30,000. One doctor ideally should not take care of more than 2,000 people, could reasonably handle about 5,000, but to look after 30,000 people is an impossibility.

Medical care to the villages for the next few decades cannot be rendered unless there is extensive supplementary care from private physicians or from healers or other systems in the same area. Even the lowest utilisation figures—three visits per individual per year—would require a daily case load of well in excess of 300 patients and would not permit any kind of decent care. If government officials accept the fact that within the next few decades an ideal system of medical care, using available resources, would be a doctor-patient ratio of one to four thousand or one to five thousand, it would be reasonable to expect government to support some pilot projects at this point.

If government is now willing to spend a fixed amount for the care of 60,000 people, it would also be reasonable to expect government to make some contribution for smaller self-help plans at the rural level. It is possible that more pleasant working conditions will attract doctors, presently living in cities, to rural areas and thus help with a better distribution of doctors in India. At present more than half of all the allopathic doctors of the country practice in a few cities and one State, namely Calcutta, Bombay, Madras and Andhra, Delhi leaving the rest of the country thoroughly undersupplied except for a few additional urban centres. At present government is willing to make contributions of 50% of the budget to medical care schemes such as the Contributory Health Service in Delhi as well as the Employees' State Insurance plan, which also receives subsidies of 50%. Though these plans have merit and undoubtedly are reaching some of the objectives for which they were set up, they rather neglect participation of members, or a real sense of belonging combined with a special sense of responsibility of its staff. If government then is willing to give so much in some instances, then it should be possible to obtain funds for medical care projects set up by the people themselves.

The contribution by government might take the following form :

(1) Initial capital grant for building and equipment.

(2) A grant for a revolving drug fund.

(3) Free supply of drug mixtures normally used in government dispensaries.

(4) Payment of salaries of some auxiliary personnel such as nurse-midwife, dai, compounder or helper. But under no circumstances should the doctor be a government employee.

(5) Providing a vehicle for the doctor, but only if all expenses for upkeep also are given.

What should be the *doctor's position* in such a plan? Under ideal circumstances the doctor should give his *full time* to the medical self-help plan and should not be permitted a private practice of his own. It might not be good for him to consider himself completely an employee of the plan, since as a professional person, he will not wish to be completely dependent on a managing committee, often inexperienced and potentially arbitrary in its exertion of authority. Generally it would not be wise to reduce the role of doctors to the kind of dependent position now existing for school teachers. It is also important psychologically that patients do not look upon the doctor simply 'as their employee'. He should be their guide and helper. It would seem wisest to attempt setting up a *medical advisory committee* to the new managing board, consisting of the civil surgeon or District Medical Officer of that area and possibly of some other professional members. They would advise the managing board with regard to a doctor's qualifications and could act as buffer for complaints and the settlement of grievances. However, the final authority must be in the hands of the managing board, but it will be used more wisely if they accept the advice of professionals of the advisory committee. Also such an arrangement would make a good working relationship with the governmental medical officers of that region more likely and might avoid some frictions or jealousies.

The doctors' pay should be adequate. No exact figures can be given because local conditions vary too much from State to State. But as a rough guide it would seem that a doctor in a rural community should earn in the neighbourhood of Rs. 500. The managing board should show interest in the availability of housing for the doctor and other staff and schooling for children, but should not too easily commit capital funds for construction of staff residencies, unless such funds could be obtained from the outside. A doctor should not be expected to work 7 days a week and except for extreme emergencies should have dispensary hours only for five to six days a week. There must be some provision for vacation and ideally for some short-term post-graduate training at regular intervals. If a doctor has been with a plan for one year, some serious thought should be given to a retirement plan for him.

It might be possible, in a few selected areas, to guarantee the doctor a minimum income and beyond this to permit him a fixed percentage of the total professional income raised by the group. This might give the doctor a greater sense of participation in the success of the plan.

Help from outside non-governmental groups.—There is considerable room in these plans for outside support, either in the form of capital grants or even in the form of direct contributions to lower the expenses. The most essential contribution at the beginning would be in the form of a *guarantee to underwrite deficits* for the first three years of operation. It is essential to be able to plan an unhurried growth and at the same time to be able to make definite commitments to the doctor and other auxiliary personnel hired. There must not be the month-to-month worry for the staff, that there may not be sufficient income to pay their salaries. The necessary funds for this may be raised from Indian or foreign foundations, from public-spirited citizens or perhaps, and this would be most desirable, from surplus funds of existing non-medical cooperatives.

Drugs.—Should free medicine be provided for all the members of the plan ? Assuming that mostly the allopathic system of medicine will be used, the anticipated cost for drugs per member will be between four and eight rupees per year, though the maximum figure is difficult to define. If we use an average figure of Rs. 6 then for a family of 6 members the monthly cost for drugs alone would average Rs. 3. This undoubtedly is much too high a contribution to expect from village families. Consequently several alternatives present themselves.

(a) All drugs can be sold at cost.

(b) A fixed fee per prescription at Re. 0-25 or Re. 0-50 might be raised, regardless of the drug used, though there should be some definition of the period of time for which the supply of each prescription is supposed to last, especially for chronic diseases.

(c) Only cheap drugs can be given out free, but the more expensive drugs can be charged for either fully or partly. The final decision in this matter will have to be taken according to the local conditions, but for the initial phases of any plan I would favour the first suggestion in order to keep the monthly contributions at a reasonably low figure.

An attempt should be made to procure drugs at wholesale prices and to obtain certain preparations either free from government or at the low rate government can often secure for its large wholesale orders.

Hospitalization.—Should not be attempted on a self-help basis. Existing government facilities should be used. This might not be an ideal plan, but few if any private groups could presently afford the high expenses needed to set up and maintain good hospitals.

Actual Operation of Rural Plan.—If we remember our previous definition of standards whereby a self-help medical care plan should not attempt to cover too many people in order to enable the doctor to make proper examinations and decide on the proper treatment, we must arrive at a figure for the *optimal maximum number* to be covered. We may base this on a utilization figure of five visits per subscriber per year—this may be a bit low but the range of figures obtained in the country goes from a low of 3 and to a high of 10. Assuming that a thousand families are covered, which will mean about 5500 individuals, then the total number of visits per year will be 27,500 and the daily patient load for the doctor will be around 80. Actually this load still is too high. But since this is considerably lower than the figure common in governmental dispensaries and since it is essential to compromise at some level between ideal standards and practical realities, the assumption will be that per doctor, 1000 families should be covered. Then if drugs are not included but only the payment to the doctor and to some or all of the auxiliary personnel, and if capital expenditures can be obtained from outside sources, the monthly contribution per family should be in the

the annual income for the plan would be Rs. 12000, Rs. 6000 would neighbourhood of one rupee. It would mean that at full enrolment be available to pay the doctor and Rs. 6000 for other expenses. It may be possible to utilize private practitioners on a panel system basis. They may be persuaded that a prepayment plan would be advantageous to them as well as to their patients. In such a scheme drugs on a cost basis also should be available. Contributions to be made to the doctors would depend on local conditions, but would probably be in the neighbourhood of Rs. 10 per family per year. The Employees' State Insurance Plan pays doctors in Calcutta and Bombay about Rs. 6.50 per individual per year, but from this amount the doctors are expected to give simple drug mixtures free. The pattern of part-time medical practitioners is not recommended, but it may be the only feasible way in some communities at the beginning. This would apply particularly if it is felt that the number of potential members in that area is so small, that a self-supporting plan with a full-time doctor could never succeed.

In areas where at present medical care is particularly inadequate, it might be possible to set up dispensary days or half days in several closely connected panchayat areas which the doctor will attend on certain fixed days. Ideally there should be five such centers in an area and in that instance a large number of families could be covered, since less regular availability of medical care would keep down the utilization figures. Assuming then that there are 5 panchayat areas and that in each of these 500 families would join, we can cover 2500 families. With a contribution of Rs. 6 per family per year the income would be Rs. 15000 annually. This would suffice to pay the doctor and to keep one auxiliary person such as a dai in each of the five areas on a full-time basis. This auxiliary medical person could help in the follow-up of treatment and with preventive care. In five areas the doctor could attend each area once or two times a week. *Domiciliary care should not be included.* While villagers will feel this to be a vital part of treatment it simply cannot be done while at the same time costs are kept down. It might be quite feasible to permit the doctor to make domiciliary calls at a fixed fee. The cost of the service would keep the number of calls at a reasonable level, while a free service in this particular instance might easily lead to abuses. Also, this might provide the plan with an additional income, or by prior agreement all or part of the fee might be made available to the doctor. The doctor should not be supplied with a vehicle, but would be expected to travel by cycle. He can choose the most attractive locality in that vicinity for his residence.

One of the basic problems which must be faced but for which no solution is offered, is the fact that in the past most people in India have been used to free office visits to a doctor. They then were kept under the illusion that they got free medical services, but only paid for medicines. Of course, actually the doctor will hide his own professional fee in the charge of the medication. In the scheme proposed, the villagers would have to understand the reason for keeping professional charges and drug charges separate. Since drugs would be sold at or near cost, there should be a considerable saving for the subscribers.

Non-members may be treated. They should have to pay considerably more than members. The income from their fees should not go to the doctor but to the plan. But it would be feasible to permit the doctor a fixed percentage (50%?) of this private income.

SAMPLE EXPENSE BUDGET FOR RURAL PLAN (Annual)

	Rs.
A. Salaries :	
Physician	6000
Midwife or Dai	900
Compounder	900
General Helper	500
B. General :	
Rent	600
Replacement of equipment & Miscellaneous	500
Cost of vacation relief for doctor & others	500
TOTAL	9000

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This estimate is sufficiently below the maximum figure of Rs. 12000—to permit for flexibility in planning and for a reserve.

There must be an *entrance* fee to the plan in order to discourage people from dropping out for a while when they are not sick. This should be high enough to accomplish this purpose, but not so high that people will find it too difficult to join. If families get behind with their dues, they should not automatically be reinstated at their convenience. Definite rules must be set up and enforced for this contingency. Perhaps a grace period of 30 days would seem reasonble for reinstatement without any penalty, but only once a year. After 30 days, reinstatement should only be possible if all back dues are paid. If that seems excessive, re-admission should only be possible by paying a second entrance fee. Perhaps these rules will appear too prohibitive and too impractical to enforce. But in one of the plans presently in existence had faced up to this problem of non-payment of dues, and several such as Sriniketan and Satlama faced special difficulties because of this. A definite amount for an entrance fee has not been recommended; perhaps the entrance fee should equal about 4-6 monthly dues, payment of this could be stretched out over many months and be added to the regular monthly fee. In the case of reinstatement the full entrance fee should be due at once.

There is an alternative method for preventing the worst abuses of members getting in and out of the plan at their own convenience. This would be the setting up of an initial period of no coverage after joining. This would not seem practical for new members, who at first normally would join when they first need services, but might be a way of making it easier to recapture the interest of members who have gotten behind with their payments.

Most plans in the United States have provisions for limiting the coverage of new members initially, and reserving the right of rejecting new members, particularly if they have known chronic diseases. From an insurance point of view, such a precaution would seem desirable, but it is not recommended to make rules too complex at the village level, and not to put any limits on the medical coverage within the basic plan. Should drugs, especially expensive drugs, be included in the plan, some time limit for chronic diseases might be necessary.

Should preventive care be included? Obviously, ideally a major contribution of a pre-payment plan would be the inclusion of all preventive services such as vaccinations for typhoid, tetanus, small pox, diphtheria, cholera and for children also pertussis and poliomyelitis. There should be periodic physical examinations, and where available special laboratory tests. Health education and environmental sanitation with regard to safe water, use of latrines, nutrition also would be part of the preventive care. Finally, well-baby clinics and also family planning clinics would be desirable. But initially preventive care may have to be quite limited because of lack of funds or available physician's time. But it is considered to be most important as an objective. Perhaps this would be an area where governmental medical services could be utilised by the plan.

EQUIPMENT NEEDS FOR A RURAL PLAN

Data on this will be kept at the A.I.C.U. office in Delhi. No attempt has been made to reproduce this data in this report.

Summary of Basic Data.—To facilitate calculations of cost and utilization figures, some of the data given will be summarized here. With the help of this data, often based on careful estimates rather than experience records, costs and services can be calculated for any plan.

Average Size of Families : 5-6 people.

Reasonable doctor/patient ratio at village level : 1 : 5000.

Average utilization figures, *i.e.*, number of visits per member per year : five (low of 3, high of 10).

Average cost of drugs given out per patient per year : Rs. 6 (low of Rs. 4, high in excess of 12)—

This last figure for drug cost is the most variable and deceptive one. In the case of devoted full-time physicians the cost may be expected to be on the low side. It often is possible to treat an illness effectively with an inexpensive drug, and the doctor's motivation, knowledge and interest is of great importance in this. On the other hand, a part-time and perhaps somewhat indifferent physician may give out very expensive but not necessarily more effective drugs.

Number of patients an MBBS can effectively see per day :

Reasonable level : Up to 60
Possible : up to 80

It is quite possible that a well qualified doctor will not be willing to see more than 60 patients a day, since he will require more time than a doctor with a very superficial approach.

Urban Medical Co-operatives.—Essentially, the same basic rules with regard to utilisation figures, drug costs and doctor services apply as for rural centers. But there are certain differences which must be kept in mind.

In the first place, from the very beginning standards of care and facilities must be planned carefully. In rural areas, a new medical cooperative may face little competition from private practitioners and other medical facilities, but an urban medical plan, from the very beginning, must be *better* and offer more than what might be available from private practitioners or government dispensaries.

In calculating cost, the doctor's salary should be figured more closely to Rs. 1000 a month. His patient load should be less than in a rural area since his patients will usually be more educated and sophisticated and require more individual attention. The maximum load should be sixty a day, but 40-50 patients daily would be more desirable.

Adequate *laboratory facilities* for blood counts, urinary and fecal examinations and possibly for x-rays should also be available. Since considerable capital expenses would be required to set this up, initially arrangements might be made with existing services ; this could be done on a basis of charging less to members of the cooperative or even charging nothing and including cost in the monthly contribution.

Middle-class urbanites would be reluctant to wait for long periods of time. A great attraction might be an *appointment system,* giving individual appointment times for seeing the doctor, but allowing some time for him to see acute cases as well.

How much can city families be expected to contribute on a prepayment basis? For families earning in excess of Rs. 300 a month, a reasonable figure might be up to Rs. 10 a month per family. In that case, drugs could be covered fully and should be expected to cost about Rs. 3 per family per month, if no outside prescriptions are filled and if drugs are bought and dispensed directly by the co-operative plan. Exact calculations and budgets cannot be given without taking full account of all possible variables in available facilities and extent of care to be offered. Perhaps in some communities existing clinics find themselves under some financial pressure and would be willing to make arrangement for gradual conversion into cooperatives. If such a clinic or hospital could be found, this would be an ideal beginning for a medical cooperative, since high initial capital expenditures could be avoided and a budget could be calculated more easily. Also, it might be possible to find a larger group to join *in toto,* such as attorneys, city employees, members of a university faculty or teachers. Group coverage has the advantage of spreading insurance risk; the disadvantage for a cooperative is the fact that the relationship between the subscriber and the co-operative will be more impersonal and indifferent and there is greater danger of abuses.

Since many people questioned, thought that an urban medical co-operative would fill a "felt need", it is hoped that one or two experimental plans can be started.

Appendix B-7

Extract from the Report of the Special Committee appointed by the Government of Madras for drawing schemes of training during the Third Five Year Plan

There has always been considerable difficulty to get qualified teachers for the pre-clinical subjects of Anatomy, Physiology and Biochemistry and also for the clinical laboratory subjects like Pathology, Bacteriology, Pharmacology, Hygiene and Public Health.

So far as clinical subjects are concerned the difficulties have not been so great because of the large number of candidates having post-graduate degrees and also because of the system of honorary medical staff.

In each State there should be one institution upgraded to the highest level possible for training of post-graduates who will be available for teaching centres and also for the District Headquarters Hospitals and larger taluk hospitals.

For providing adequate medical relief for the rural population of India every District Headquarters Hospital should be provided with at least 9 specialists and every taluk headquarters hospital with 100 beds or more, should have a trained surgeon, a physician and an Obstetrician and Gynaecologist.

It has been computed that the total number for the whole of India with 330 Districts and 1,898 Taluks would be in the nature of about 8,650 specialists who will be required to give specialist care at District and Taluk level.

Besides the above, qualified doctors in large numbers would be required for manning primary health centres.

The training of specialists for the District and Taluk Headquarters, as also the training of the general practitioner for the primary health centres, should go hand in hand so that at least by the end of the Fourth Five Year Plan, with better means of transport and telephonic communication, specialist care can be made available even to the remotest parts of the rural areas.

The training of surgeons, physicians, obstetricians and gynaecologists for the taluk headquarters hospitals can be done in all teaching institutions with a hospital of 500 to 1,000 beds. In addition, the award of a Diploma as a result of one year's course after housesurgeonship would help in sending trained men to rural areas.

Apart from creating facilities for teachers of pre-clinical and clinical laboratory subjects, an incentive may be given to such trainees by improving the scales of pay of the Professors of these subjects.

Another fundamental requirement of teaching centres is whole-time units, particularly in the fields of medicine, surgery, obstetrics and gynaecology.

Post-graduate facilities must be preferably given to those who have had experience of one or two years' work in the rural setting like a primary health centre, in order to attract people to the rural areas.

The general principle to be followed in a teaching hospital should be the utilization of clinical material for the sake of the undergraduate and post-graduate students. It, therefore, follows that in a teaching institution there should not be any promiscuous mixing of serious cases, bad cases and cases of a light nature. This will also have an effect on the nursing service. There should, threfore, be a chronic and convalescent hospital separate from the teaching hospital or the general hospital, where the bulk of the patients requiring rest or nourishment or not so intensive a treatment can be accommodated.

At present the out-patient department of a hospital is so congested that it is impossible to give proper attenion to any patients. In Western Countries the out-patient department is the most inviting place, where every patient has got a seat, where there is a cafeteria for the patients and in short where waiting is not a serious strain as in India. A proper out-patient department should, therefore, be organised. It will not only be a relief to the in-patient departments but will provide greater attention to patients with serious ailments.

In addition to a properly planned out-patient department separate from the general hospital, there should be a casualty department or emergency cases and accident cases; an Orthopaedic Department for attending to accident cases involving fractures, etc. In such separate departments E. N. T. cases can also be accommodated. The out-patient department should have separate clinics like diabetic clinic, mental clinic, chest clinic, etc. X-ray diagnostic units should not be centralised as at present, but all hospitals should have their own x-ray units. This will avoid the terrific delays at present being experienced.

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Similarly, there should be separate provision for laboratory investigations, such as bio-Chemical, pathological and bacteriological in each hospital.

The drug industry has expanded very greatly. In the circumstances, a large number of well-qualified degree holders of pharmacy is a crying necessity. Besides the degree holders, the trade requires technologists in pharmacy for which also training facilities should be provided.

Each teaching institution should take up a maximum of 100 students per year for the Sanitary Inspectors' or Public Health Inspectors' Course. It is possible because of the compulsory teaching of social and preventive medicine in medical colleges.

A large number of radiographers and darkroom assistants are required and all teaching institutions should have facilities for training these people.

The training for the laboratory technician at present given should be enlarged to cover a variety of needs in the fields of medicine and public health. There should be a good workshop with trained technicians and a qualified engineer for the repair of appliances and equipment. In fact, such a workshop can be part of the Medical Stores Depot.

Training for general nursing can be given in all District Headquarters Hospitals. There can be one trainee for 5 beds, along with trained nurses for supervision and guidance. These trainees must be given residential facilities. Some of the hospitals can also provide special training facilities for certain classes of nurses, like Sister Tutors, Theatre Sisters, Nurses for infectious diseases, Nurses for mental hospital, Public Health nurses, etc. Such special trainees should be given diploma.

In addition, there should be provision for training of auxiliary nursing personnel, midwives, health visitors, dieticians, etc., on a large scale.

For some time to come facilities must be given to well-qualified medical officers to proceed to foreign countries for specialization. The selection of suitable persons for such studies abroad should not be restricted to persons in Government service. All medical men can be considered for this on a regional basis.

Honorary medical staff have contributed a great deal in the past and it would be necessary to give them attractive terms to continue their appointments in an honorary capacity.

The possibility of exchange of professorial staff in special branches for periods of one to three years from reputed Universities abroad should be explored.

No hospital should provide for more than 750 beds ordinarily. Even in selected general hospitals attached to teaching institutions the maximum should never exceed 1000 beds.

For the construction of a hospital or a medical college, which has become a highly specialized branch in engineering and medical administration, it would be desirable to appoint a high power committee at the headquarters of each State having full authority to vet all plans. This Committee should consist of the Chief Engineer in the P. W. D., the Chief Architect, the Director of Medical Services, the Director of Public Health, the Dean of a medical college, a Senior District Medical Officer, a medical administrator and one or two other experts. This high power committee should lay down type plans and provide for eventual expansion of the activities of the hospital.

Another point in connection with rural medical relief will be the provision of feeding centres and mobile units. The taluk headquarters hospitals and the District Headquarters Hospitals and even the hospitals in the State can be linked up to these feeding centres and mobile units. The mobile units can go to the villages and pick up serious cases for admission to the hospitals. They can also give ordinary medical aid. Thus there should be an integrated method of medical relief with facilities for quick transport and with the object of bringing to the door of the rural population medical relief.

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Appendix B-8

SUMMARY OF THE RULES MADE BY STATE GOVERNMENTS UNDER FACTORIES ACT 1948 REGARDING MEDICAL AND PUBLIC HEALTH FACILITIES

States	Under Sec. 10 (certifying Surgeons)	Under Sec. 12(1) (Disposal of waste and effluents)	Under Sec. 76 (Powers to make rules regarding physical standards, form of Certificates, etc.)	Administrative machinery & set up for enforcing the provisions	Other comments on health aspects
1	2	3	4	5	6
1. Andhra Pradesh.	Rule 14 of the Andhra Pradesh Factories Rules.	Rule 17 of the Andhra Pradesh Factories Rules.	Rule 14 of the Andhra Pradesh Factories Rules.	Assistant Director of Medical Services (Employees' State Insurance).	Part-time Inspectors carry-out the duties in connection with the examination and certification of young persons and issue certificate of fitness. In addition to that they examine the persons employed in Factories in such dangerous occupations processes as may be notified under section 87 of the Factory Act. District Health Officers are declared as additional Inspectors for the purpose of factories Act, 1948. Their inspection work is exclusively confined to the health and sanitory provisions of the Factories Act, 1948.
2. Assam .	Reply not received.				

1	2	3	4	5	6
3. Bihar .	Rules 14 and 14A to 14E of Bihar Factories Rules, 1950.	No detailed rules have been framed as yet.	Rule 16 of Bihar Factories Act, 1950.	There are 9 circle Inspectors of Factories, one medical inspector of Factories, one chemical inspector of Factories and 72 part-time certifying surgeons (69 from health department and 3 private medical practitioners).	Rules for preventing explosures of workers of Silica dust in refractory, mica mining, potteries Dermititis, Bogassesis, printing press and chemical works, are being framed.
4. Gujarat .	Rule 15 of Gujarat Factories Rules.	Rule 18 of Gujarat Factories Rules.	Rule 15 of Gujarat Factories Rules.	Qualified medical practitioners in Government dispensaries as certifying Surgeons. Medical Officers of not less than 7 years experience as Additional Inspector of Factories for Sec. 10. Director of Public Health Deputy Director, Assistant Directors of Public Health and District Health Officers as additional Inspector of Factories for Sec. 76.	Rule 102 has been framed for the protection of Workers in dangerous occupations mentioned in schedules II, III, IV, VI, X, XI, XIII of the State Rules (Gujarat Factories Rules).
5. Jammu and Kashmir.	..	..	..	..	Rules have been framed under sections 10, 12(i) & 76 which have not been sanctioned yet.
6. Kerala .	Rule 14 Kerala Factories Rules, 1957.	No rule has been prescribed.	No rules have been prescribed however, rule 14 under Sec. 10(4) provides for some of the matters contemplated in Section 76.	There are one Chief Inspector of Factories Boilers one Deputy Inspector of Factories & Boilers, two Regional and Seven Inspectors of Factories and seven additional Inspectors of Factories for enforming the various provisions.	There is a post of medical Inspector of Factories which is vacant at present. Action is being taken to fill up this post. Action is also being taken to declare all medical officers in-charge of Govt. Hospital and Dispensaries as Certifying Surgeon for Factories within their respective jurisdictions.

					Rules have also been formed to declare certain operation, as dangerous when carried on in any Factory under Section 87. These rules also provide for health, medical requirements protective equipments & clothing disposal of waste and harmful substances periodical examination etc. They also prohibit the employment of women & children. In certain classes of Factories ambulance room have been provided. Rule 89 prescribed under Sec. 45(1) provides for 1st aid appliance to be kept in Factories. In certain medical Centre, the Employees' State Insurance Scheme is on operation. The general conditions of health of factory workers are fairly satisfactorily. Prompt action is being taken by department to improve and safeguard the health of workers.
7. Madhya Pradesh.	Notification No. 3256-2949-XXIII dated 26 Dec., 1950 & page 6 of Madhya Pradesh Labour Manual Volume II.	Notification No. 444-329 XXVI dated 24th Feb. 1950 & page 9 of Madhya Pradesh Labour Manual Volume II.	Page 6 of the Madhya Pradesh Labour Manual Volume II.	Civil Surgeons as certifying Surgeons for enforcing the provisions of Sec. 10. Civil Surgeons or additional Inspector of Factories under Sec. 76.	No comments except—the rules do not provide for medical treatment of employees for illness. Sec. 45 provides for ambulance room.

1	2	3	4	5	6
8. Madras .	Rules 14 of Madras Factories Rules 1959.	No rules . .	No rules . .	Civil Assistant Surgeons, Medical Officers in charge of Government Hospital & Local Fund Dispensaries as certifying Surgeons for enforcing the provisions of Sec. 10.	It is desirable to have a separate set of Industrial Health Officers or Medical Officers to devote their attention solely to factories carrying on dangerous operations.
9. Mysore .	Rule 14 of the Mysore Factories Rules 1952.	Rule 17 of the Mysore Factories Rules 1952.	No separate rule items covered by Rule 14.	Certifying Surgeons for Secs. 10 & 76, Public Health Authority for Sec. 12.	
10. Maharashtra	Rules 15(1) to 15(10) of Maharashtra Factories Rules.	No rules have been framed under section 12(i) but some rules framed under 12 (ii) (Rule 18 of the Maharashtra Factories Rules).	No rules have been framed.	Government Medical Officer as certifying surgeons for Sec. 10(4) & Inspectors for Rule 18 under Sec. 12 to inforce the provisions of Sec. 10.	Under Rules 71(12), ambulance room or dispensary to be in the charge of a qualified Medical Practitioner. It is proposed that in factories employing 500—999 workers, doctor should attend for 12 hours a week and 24 hours a week in factories employing 1,000 or more workers.
11. Orissa .	Rule 14 of Orissa Factories Rules, 1950.	Rule 17 of Orissa Factories Rules, 1950.	Rules 87(A) to 87(C) of Orissa Factories Rules, 1950.	All Medical Officers of Health in the State have been appointed as certifying surgeons for enforcing the provisions of Sec. 10.	Although Medical Officers have been appointed as Additional Inspectors of Factories, the provisions of the Act are not supervised effectively because they are occupied with their normal work. It is necessary to have full-time Medical Officers. Steps are being taken.
12. Punjab .	Rule 17 of Punjab Factories Rules, 1952.	Rule 19 of Punjab Factories Rules, 1952.	Rule 17 of Punjab Factories Rules, 1952.	All the District Medical Officers of Health & Municipal Medical Officers of Health as Additional Inspectors of Factories	Periodical Medical examination of workers engaged in dangerous operations by civil surgeon of the area. Steps are

				to enforce the provisions.	being taken to declare Medical Inspectors of Factories as certifying surgeons.
13. Rajasthan	Rule 10 of Rajasthan Factories Rules.	Rule 17 of the Rajasthan Factories Rules.	No rules framed as yet.	All Principal Medical and Health Officers & District Medical & Health Officers in the state have been appointed as Certifying Surgeons, for enforcement of the provisions.	Such Certifying Surgeons are too busy with their own work and so they find it difficult to attend to the work as Certifying Surgeons. The appointment of separate whole time Inspectors & Certifying Surgeons is being considered by the State Govt.
14. Uttar Pradesh.	Rule 16 of Uttar Pradesh Factories Rules, 1950.	Rule 18 of the same 1950 Rules.	Rule 101 of Uttar Pradesh Factories Rules, 1950.	No special administrative machinery. These are administered by the State Chief Inspectors of Factories who is assisted by a Deputy Chief Inspector or Inspectors of Factories & Ministerial Staff.	Provisions relating to health of factory workers are enforced by the State Factories Inspectorate but Medical provisions have not been enforced due to non-appointment of Inspector of Factories (Medical).
15. West Bengal.	Rules 16 of West Bengal Factories Rules, 1958.	Rules 19 of West Bengal Factories Rules, 1958.	Rule 16 of West Bengal Factories Rules, 1958.	State Government—Labour Department Chief Inspector of Factories assisted by 4 full-time medical officers.	Large factories have provided medical facilities for workers and their families.
16. Andaman	Rule 14 of the Andaman Nicobar Islands Factories Rules.	Rule 17 of the Andaman Nicobar Islands Factories Rules.	No rules have been framed.	The Senior medical officer has been appointed as certifying Surgeon and Deputy Commissioner as the Chief Inspector and the Inspector of Factories.	No Comments.
17. Delhi .	Rule 14 of the Delhi Factory Rules, 1950.	Rule 17 of the D. F. Rules,	No Rule has been framed.	Asstt. Civil Surgeon, Police Hospital Delhi is performing the duties of Certifying Surgeon under 10 (4) (a) and the	No rule has been framed under Section 76 of the Act. Rule 14 of the D. R. Rules 1950 specify the procedure to be

1	2	3	4	5	6
				Inspector of Factories (medical) Delhi is performing the duties of certifying Surgeon as required under Section 10(4) (b)& (c).	adopted by the certifying Surgeon and form 5 has been prescribed for issue of fitness certificates to child workers. No fee has been prescribed so far and the matter is under consideration. Under Rule 95 of the said Rules contain operations have been declared to be dangerous. The medical examination of the workers is conducted before they are employed and during the course of employment by the Certifying Surgeon. Inspector of Factories (medical) has been specially entrusted in matters such as sanitation, ventilation and purity of atmosphere and to investigate the health and factory operation, including industrial diseases.
18. Himachal Pradesh.	Rule 14 of Himachal Pradesh Factories Rules.	Rules 17 of Himachal Pradesh Factories Rules.	No rules have so far been framed.	There is one Chief Inspector and one Inspector of Factories to look into proper enforcement of provisions of the Act.	Necessary steps to make rules under 12(1) and 76 Factories Act, 1948 will be taken soon.
19. Manipur .	No rule .	No rule . .	No rule . .	Nil	There are very few factories. Most of them are Cottage Industries and the factory & labour organisation is still in preliminary stage.

					The Director of Industries is functioning as labour Commissioner, Inspector of Factories and Registrar of firms. No technical staff to look after the welfare work of the Factories.
20. Tripura .	Rule 14 of the Tripura Factory Rule 1952.	Rules have been framed. Specific Rule has not been mentioned.	No rules have been framed.	N.A.	The Tripura Factory Rules 1952 however prescribe the forms of certificate of fitness to be granted under Sec. 69 and also prescribe the physical standard to be allowed by children and a adolescents working in Factories. No Certifying Surgeon has yet been appointed. Necessary steps are being taken for his appointment under the Act. There are 54 Factories functioning.

Appendix B-9

(a) VISIT TO COAL MINES

In the Dhanbad Coalmines areas there are three agencies providing medical and public health services.

1. Jharia Mines Board of Health
2. Coalmines Welfare Fund
3. State Health Services.

The Jharia Mines Board of Health was created in 1914 and with it the Jharia Water Board in 1935 to look after the public health aspects in the Jharia Mines areas. The objectives of the Board are to control the haphazard development of the area, to direct and encourage sanitary improvement of collieries and to prevent the spread of epidemic diseases.

With the extension of the Food and Adulteration Acts of Bihar and Orissa to the mining settlement area, prevention of food adulteration in the mining area has been made an additional function of the Board. The Board runs an infectious diseases hospital and a leprosy hospital. Testing of drugs and analysis of water, etc., are done at the Public Health Laboratories, Registration of births and deaths, vaccination, M. C. H. and family planning and controlling of diseases are other activities of the Board. The source of income of the Board is from tonnage cess from owners of mines, royalty cess, latrine tax, etc. The Board covers an area of 797 sq. miles with a population of about 8 lakhs. The Board is not very much concerned with medical relief activities, nor does it extend its preventive health activities to places outside its area. The Chief Medical Officer of the Board is in overall control of all these activities.

The Coal mines Welfare Fund has been created in the coalmines areas of Dhanbad, Jharia and Asansol. This is a fund created out of the percentage of profits earned by mineowners for the benefit of the employees of the collieries. Curative work is done at several dispensaries, three regional hospitals and two central hospitals. The Fund has nothing to do with the preventive work. Its curative facilities extend throughout the extent of the area covered by coalmines.

The District Medical Officer of Health supervises all the State dispensaries in the area. They are responsible for the public health and curative aspects of the area under the overall control of the District Collector. The population covered by the District Board is about 10 lakhs. There is one Senior Executive Officer for Health (Civil Surgeon) for public health activities. The activities of the

District Board very much overlap the activities of the Jharia Mines Board. While the pattern of organisation under the District Board is on the basis of the Community Block areas, *i.e.*, having one Primary Health Centre to cover a population of 66,000 have a medical officer, the sanitary inspectors, auxiliary mid-wife, etc., the pattern adopted by the Jharia Coalmines is quite different. Vaccination in the area is done by the Village Level Worker, Gram Sevaks and other health staff. There are three Maternity and Childwelfare Centres. Social workers do family planning work. Vital statistics are collected by the gramsevaks but there is no countercheck.

It was felt that there was too much duplication of work. Even for vaccination it was reported that there were 35 vaccinators belonging to different organisations for handling comparatively small workload. There was considerable need for organising one central organisation to look after both curative and preventive aspects in the coalmines area. The funds also could be pooled together and utilised in the best service of the area. The Chief Medical Officer informed that the question of having an executive body incharge of public health activities in the area had been under consideration for a long time but nothing has so far been finalised.

Another important matter which was brought out during the course of discussion with the officers of the Department and the C.M.O., Jharia Mines Board of Health was that the pattern of C. D. Block and corresponding set up of Primary Health Centre did not suit to the coalmines area, and a special departure in respect of coalmines will have to be made. The population was too concentrated. Communicable and epidemic diseases spread quickly and special efforts are needed to check them. Sanitation and hygiene played a very important part in the well-being of the community. It was suggested that the Ministry of Community Development may be requested to formulate a special pattern of Blocks for the coalmines, commensurate with the exigencies of the situation.

It was reported that T. B. was very much rampant in the area, one of the reasons being that the people were too much addicted to drinking.

Central Coalmines Hospital:

This is the Central Hospital for the welfare of the employees in coalmines. This is a 250 bedded hospital, but the load on the hospital is very heavy. Not less than 350 to 400 patients are usually admitted. The hospital is financed out of the Coalmines Welfare Fund. Specialist services are available at the hospital. The hospital has two operation theatres one septic and another clean X-ray. Laboratory services are also available. There is no gynaecological theatre. There is no separate sterilisation chamber. There is no separate blood bank and no separate emergency ward. The Nursing staff is inadequate. In all there are 32 staff nurses, sisters and matron. There is a training school for nurses, where 17 student nurses are trained every six months. The admission qualification for admission to the course is matriculation. Sufficient number of students are not forthcoming. The training period extends to three years. Free furnished quarters are given to nurses. Unmarried nurses live along with student nurses. Married nurses are allotted family quarters. The hours of duty are 8 hours during the day and 11 hours during the night. There is no recreation hall or recreation facilities for nurses.

(b) DURGAPUR STEEL PLANT

The Group visited the Durgapur Steel Plant in the evening of the 5th December, 1960. Dr. Chatterjee, the Chief Medical Officer, explained to the members the position of health services and future plan of action in regard to the health conditions in the area. He said that the plant has got its own Site health unit to attend to emergency cases and a regular 72-bedded hospital in the Durgapur township capable of expansion to 100 beds. While the hospital is meant for the steel plant workers, treatment is also given to outsiders in the area on a token sum of Rs. 0·50 nP. for consultation plus cost of medicine. The Plant authorities propose to set up a pucca 250 bedded hospital with provision for future expansion upto 500 beds in the very near future. The designs, specifications etc. of the hospital have been completed. The hospital would provide all kinds of specialist treatment, out-patients and inpatient services. There would be a separate maternity ward where patients would be admitted directly, or through reference. The Plant also propose to set up about 10 maternity and child health centres where ordinary cases of delivery would be attended and only abnormal or complicated cases would be referred to the hospital. There are at present 8000 employed in the Steel Plant, but ultimately there will be 15 to 20 thousand employees. The present total population in the Project is 40,000. The public health side is looked after by an Assistant Health Officer, with 2 Sanitary Inspectors, 4 Health Assistants and other menial staff. On the anti-malaria side they had 1 malaria inspector, 1 insect collector and other field staff. Smallpox and Cholera have been controlled since 1959 in the Colony itself.

Dr. Chatterjee stated that at the present moment the erection work at the plant was almost complete. But with the coming up of new industrial schemes in the Durgapur industrial areas, the labour population of the area, in his estimate, would jump to more than 10 lakhs of people. A few miles away from the Durgapur township a few very big industrial enterprises, namely the Coke Factory of the Government of West Bengal, the A.C.C. factory to manufacture mechanical equipment and boiler parts Mass equipment factory of the Heavy Engineering Corporation etc. are also coming up. There was a branch of the D. V. C. also at Durgapur. Dr. Chatterjee said that Durgapur industrial area would develop into an enormous area and it was very imperative that some sort of a regular health programme should be started in the area. The industrial concerns would, of course, make their own health arrangements for the welfare of the employees but there was no health services for the floating population and others settled in the areas. There was no proper planning, no water supply, no drainage and no sewerage. The Steel Plant has set up a water treatment plant having a capacity of 2 million gallons. The Plant authorities contemplate a 6 million gallon water treatment plant to serve the needs of the employees of Plant on the basis of 40 gallons per capita. People in the locality did not observe any byelaws towards building construction. The buildings were coming up overnight. It was felt very essential that there should be a coordinated public health organisation to look after the public health aspects of both the Steel Plant and other concerns coming up and of the general public health department. If that was not done there was considerable danger of some epidemic breaking out in the area. Further it was pointed out that there should be some organisation to take care of building activities in the area. Dr. Chatterjee pointed out that to develop the area the Government of West Bengal had set up the Durgapur Industrial Development Board. Two strips of land, measuring about 300 acres each have already been acquired by the Board. Blue prints for the development of the area are understood to be ready and it is hoped that the construction programme would be shortly started.

(c) NAGARJUNA SAGAR PROJECT

The population of the permanent camp of the project area is about 50,000. Of this about 3,500 are labourers employed departmentally, about 1,000 are officers and administration staff and the rest contractors' labour and employees. There are 116 officers employed for the Project. Most of the contractors' labour is recruited from outside the area. It was stated that the masons and other skilled workers were recruited from places like Coimbatore and Salem and non-skilled labour from various other parts of the country. The average wage of a skilled labourer amounts to as much as Rs. 8/- per day while the wage of an unskilled casual labourer is Rs. 1/8/- per day.

Housing :

The superior staff are housed in permanent buildings. The departmental labour is housed in semipermanent thatched hutting. These are provided with flooring, thatched walls, asbestos sheeting or thatched roofs. The layout of the departmental labour camps is fairly satisfactory. The contractors' labour, however, is housed in very poor type of thatched huts. These are not even spaced regularly in lines with proper approached or roads in between or drains. They are just strewn about in little groups.

Environmental Sanitation :

While the permanent houses have good sanitary arrangements with flush latrines and septic tanks, neither the departmental labour nor the contractors' labour have satisfactory arrangements. Even the covents of the rest houses meant to accommodate visitors have no latrines nor are there any arrangements for the many drivers of vehicles who go there from outside. There are a few community type of service latrines for departmental labour, but absolutely no latrines at all for the contractors' labour who use the country-side. Sweepers are supposed to pick up this night soil. The night soil from service latrines is removed to trenching grounds.

There was an outbreak of cholera in the camp in 1958 with heavy mortality. However, after that there have been no attacks of cholera though it is understood bowel diseases and typhoid fever cases continue to occur.

There is no drainage system nor any satisfactory means of disposal of sullage water. This has resulted in large fly breeding. Refuse is collected in bins and carted away and dumped.

Watersupply :

Good piped filtered watersupply has been installed all over the camp and the supply is very satisfactory. Chlorination by bleaching powder after rapid sand filtration is the method of purification.

In addition to the permanent camp at the Dam site there are smaller shifting camps along the lines of the canals which are being constructed. These move further and further away from the Dam site as the canals are being excavated. The labour in these camps is housed in thatched huts and the general sanitation arrangements are worse than in the dam area.

Health Arrangements :

(a) *Public Health.*—A Health Officer of the rank of Assistant Surgeon is posted exclusively for this project. He is under the administrative control of the Project Officer and under the technical control of the

Director of Public Health, Andhra Pradesh. He has the following staff under him:—

Health Inspectors	4
Maistries	16
Sweepers	112
Scavangers	127

There is a special anti-malaria unit under the Asstt. Director of Health Services for anti-malaria campaign. This area is also included in the National Malaria Eradication Campaign and the work of the Malaria Unit is being supervised by the Regional Deputy Director of the N.M.E.P. and the Assistant Director of Public Health. The activities of the health staff comprise only supervision of the scavenging staff, smallpox vaccination and cholera inoculation during the season.

(b) *Medical Arrangements*.—There is a good hospital housed in a permanent buildings newly constructed with accommodation for about 40 beds. The staff consists of a Superintendent of the rank of a Civil Surgeon, six Assistant Surgeons including a lady doctor, 8 nurses, 3 midwives, 2 dais, one health visitor, one X-ray technician, one laboratory technician, one physio-therapist, and other ministerial and subordinate staff.

The equipment is good and includes an X-ray plant, a good operation theatre including anaesthetic equipment, a small clinical side room and other necessary equipment.

In addition to the hospital there is a large dispensary on the right bank. This is in charge of a medical officer. There is a lady medical officer and a maternity assistant and other subordinate staff. There is a smaller dispensary on the left bank attended by a medical officer from the hospital. There are also first aid posts which are being run at work spots in the dam site and canals and also in the workshops in the project area.

Till 16th October, 1959, all the health arrangements, preventive and curative, were under the charge of a Chief Medical Officer. From that date the medical and public health units were completely separated. The hospital was placed under the charge of a civil surgeon while the public health arrangements continued under the Health Officer of the rank of an Assistant Surgeon The Committee feel that this separation is a retrograde step. It was also noted that there was a complete lack of coordination between the activities of the health and medical staff. For example the lady doctor of the hospital is used mainly for work in the hospital and dispensaries. About 500 labour cases are conducted in the hospital. A certain amount of "domiciliary" work was said to be carried out by trained midwives and dais who report complicated cases to the medical officer. However, there is no ante-natal and post-natal work of child welfare activities, though there is a health visitor. Since most of the labour is housed in small shacks, it is difficult to imagine what type of 'domiciliary' midwifery is carried out. Perhaps these cases are from the families of staff housed in permanent buildings.

The Chief Medical Officer mentioned that cases of tetanus occur among women after child birth. These as well as typhoid cases could be prevented by immunisation. The medical officers are completely unaware of the anti-malaria activities and freely stated that hundreds of cases of malaria occur. This was without any blood examination. When they were told that this could not be because hardly any positive slides were found by the staff of the malaria unit and that if such a thing occurred, it would be a most serious indictment of the national malaria eradiction, they had no answer.

The incidence of V. D. is said to be 10 to 12 per cent, which is very high. This could be brought down very greatly by preventive work as well as by health education. One case of leprosy was detected. If a survey were to be made, more cases might have been detected. The general feeling appears to be that all the medical staff are comparatively under-employed and lack of supervision and direction.

Here is a colony with a population less than what is comprised in a Primary Health Unit that is being set up all over the country. It has a very big staff consisting of about seven medical officers, 8-10 health inspectors, midwives, etc. There was wonderful opportunity to establish a model demonstration camp with complete integration of health and medical activities and provision of comprehensive health service. It was however, regretfully noted that this opportunity has been missed. There has been no attention paid to the fundamental sanitation, particularly disposal of refuse and excreta and there has been no attempt at health education whatever. While smallpox vaccination is carried out and cholera inoculation is done during seasons, there are no other preventive measures taken. For example. tetanus and typhoid could be prevented. B. C. G. Vaccination could be given to children. Leprosy could be detected and many other disease spotted by careful health check. All labour could be examined on recruitment and the regular health check-up kept up.

It is the view of the office that the post of Chief Medical Officer of the Project should be revised and an experienced senior medical officer of the rank of Assistant Director of Public Health be put in charge of the entire medical and health arrangements. He should concentrate on preventive measures such as provision of latrines or other satisfactory means of disposal of night soil. Even in shifting camps like those on the canals night soil and refuse could be disposed of satisfactorily by arrangements similar to the ones-adopted by moving military camps. There is no shortage of labour. Temporary trench latrines or pit-latrines could be provided and these could be covered when the camp moves forward.

Positive health promotion by health examination of labourers, ante and post-natal clinics, children's clinics health education and publicity, family planning work—all could be carried on in an organised and coordinated manner by utilising the present staff economically and fully.

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Appendix B-10

(a) MEDICAL AID IN THE PLANTATIONS : REPLIES FROM CHIEF INSPECTORS OF PLANTATIONS.

State	Population of Plantations (in thousands)	Number of Hospitals	Number of Dispensaries	Number of beds	Number of Practitioners	Number of Nurses	Number of Midwives	Number of Nurses *cum*-Mid wives	Total Nursing Personnel
1	2	3	4	5	6	7	8	9	10
Assam	1,014	352	150	12,163	516 (besides 18 working part time).	447	592	18	1,057
Kerala	350	54	32	N.A.	37	74	19	..	93
Madras	95	34	92	1,660	58	75	68	..	143
Uttar Pradesh	3	1	8	19	13	1	2	..	3
West Bengal	183	174	132	3,575	283	224	200	..	424
TOTAL .	1,645	615	414	17,417 (excluding Kerala)	907 (18 working part time).	821	881	18	1,720

Appendix B-10

(b) POPULATION SERVED BY ONE HOSPITAL BED, DOCTOR AND NURSE, 1959. (For Plantation Population and General Population for certain States).

Name of the State	POPULATION SERVED BY ONE							
	Medical Institution (Hospital/Dispensary)		Hospital Bed		Medical Practitioner		Nurse*	
	Plantation	General	Plantation	General	Plantation	General	Plantation	General
1	2	3	4	5	6	7	8	9
Assam	2,019	15,410**	83	3,587**	1,932	3,359	959	6,766
Kerala	4,070	53,730	N.A.	1,254	9,461	17,370	3,763	(included in Madras).
Madras	754	38,580	57	1,584	1,638	2,894	664	3,761 (for Madras, Kerala and Mysore)
Uttar Pradesh	333	51,260	158	3,664	231	8,960	1,000	13,850
West Bengal	598	30,030	51	1,145	647	1,283	432	3,153
AVERAGE	1,599†	36,720††	74†	2,455††	1,798†	4,850	956†	5,837

*Including Midwives, Auxiliary Nurse-Midwives and Health Visitors.

**For the year 1957.

†Average for the above five States.

††All-India, 1958.

Appendix B-11

BRIEF REPORT ON THE VISIT OF A GROUP OF MEMBERS OF THE HEALTH SURVEY & PLANNING COMMITTEE TO ASSAM, NEFA AND NAGALAND IN MARCH, 1961.

The group consisted of the following members :—

1. General B. M. Rao,
2. Dr. Dukhan Ram,
3. Dr. C. O. Karunakaran,
4. Dr. R. V. Sathe,
5. Dr. T. R. Tewari.

List of Places visited and Discussions held by group of the H.S. & P.C. While on visit to Assam NEFA and Nagaland.

27th March, 1961 }
28th March, 1961 } *At Passighat*

1. Discussion with the Political Officer (Shri M. S. Krishnatri, IAFS).
2. Discussion with the Assistant Director of Health Services and staff of the General Hospital.

Present :

Dr. G. Raman
Dr. A. Mazumdar
Dr. D. P. Bhattacharia
Dr. Miss S. N. Neogy
Dr. C. R. Gupta

3. Visit : Two villages named Robong and Yogrung.
4. Visit : T. B. Hospital.
5. Visit : H. D. Sanatorium (Leprosy Colony).

29th March, 1961 : (*At shillong*)

1. Discussion with the officers of the Directorate of Health Services, Assam.

Present :

Dr. B. L. Choudhury, D.H.S.
Dr. Roy, D.D.H.S.
Dr. Das, President Assam Branch of I.M.A.

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2. Discussion with the Advisor to Governor and others.

Present :

Shri N. K. Rustomji, Adviser.
Dr. Verrier Elwin, Adviser for tribal areas.
Shri C. H. Naire, Deputy Adviser.
Shri R. H. M. D'Silva, Deputy Commissioner (Admn. NEFA).
Dr. P. D. Gogoi, Officiating Director of H. S., NEFA.
Dr. N. C. Pal Choudhury, Assist. D.H.S.
Dr. S. Bhattacharji, Malaria Officer, NEFA.

3. Courtesy call on the Minister for Health (Shri Brahma).

30th March, 1961 : Visit : Health Unit at Viswema.

31st March, 1961 : At Kohima.

Visit : Naga Hospital, Kohima and discussion with staff.

Present :

Dr. Talimereau, Ac.
Dr. Longrikaba Lungkumer
Dr. Haren Chandra Das
Dr. Kalachand Saha
Dr. Golam Mustafa
Dr. (Miss) K. K. Angami
Dr. (Miss) K. Parvathi
Dr. Tekanokcha Jamir
Dr. Vedilhoulie Angami

Visit :

Kohima Village
Maternity & Child Welfare Centre in Kohima Village Health Centre, Kohima Village.

Discussion with G. O. C., Kohima.

Discussion with Commissioner, Kohima.

1*st April,* 1961 :

Visit :

American Mission Hospital, Kongpopki.

Welfare Centre and Health Centre in Kohima Village. In the afternoon the Group held discussions with the General Officer Commanding, Nagaland and the Commissioner, Nagaland.

The Group returned from Kohima on the 1st April, 1961. On its way back the Group visited the Mission Hospital at Kongpopki.

In the following pages will be found a detailed report on NEFA, Assam and Nagaland based on discussions with various authorities, visits and material supplied.

NEFA

The North Eastern Frontier Agency situated in the far eastern hill regions of India according to the 1961 census comprise of a population of about 3 lakhs living in about 2500 villages dispersed over an area of 31,438 square miles of hilly land. The villages are mostly on hill tops widely separated from each other and away from sources of water. The country is chopped by innumerable streams which become turbulent during monsoon period. The rainfall is in the region of 200-300 inches per year and the ranges of hills vary in height from two to twenty thousand feet above sea level. It was observed that most of the bridges on the streams were broken and the villages connected by them remained unapproachable during the rainy season. The villages on the average had 20 to 50 houses scattered at long distances.

With the construction of jeepable roads and others under construction the approach to various Administrative Headquarters with the Division Hqs. by roads has however become possible. In rest of the area the approach is through narrow bridal paths. Thus communication is difficult even in dry weather and extremely so during the monsoon. Thick tropical vegetation adds to the problem. It may take one day to several days for a team to go from one village to the other.

After the transfer of Tuonsang division to Nagaland the Agency, for administrative purposes has five divisions, *viz.*

(1) Kamong Frontier Division with Hqs. at Domi-la

(2) Subssasiri Frontier Div. with Hqs. at Ziro

(3) Siang Frontier Div. with Hqs. at Along

(4) Lohit Frontier Division with Hqs. at Tezu

(5) Tirap Frontier Division with Hqs. at Khona.

The people of the Agency believe in the Demonistic Theory of Origin of diseases and they have their own system of cure by propitiating the spirits through sacrifices of livestock and poultry. Indigenous herbs are used for certain ailments with good results. The priest who is called the Miru in the village is an all important man. He is held in respect in the whole village. It is he who helps the villages in removing the wrath from evil spirits causing diseases. The priest is not allowed to do any work and the villagers feed him. In some of the villages the priest may be a woman. Every village has a head man called Komang usually elected. Every body in the village respects him and obeys his orders. The Komang settles village disputes. Sometimes the Political Officer of the Agency holds court and settles the disputes. The head man is rarely literate. He may speak Assamese, Hindi is only a local dialect of which there are a number. There is however no script. There are hardly and Christians in this area, some few professing the Budhist religion.

Village Organisation and Social set up.—The people lead a nomadic life. They live in thatched bamboo huts, 3′ to 4′ high from the ground level.

Space is left in the front portion for rest and recreation. Further on there are generally two rooms, one of which is used for storing provisions and cooking and the other as the living room. The rooms were found to be airy and well protected from rain and storms. The villagers keep stores of food for a year or so. In some villages the grain is stored in huts at some distance from the village. These huts are not locked but there is no pilferage.

The latrine at the back of the hut is just a place for squatting, the pigs and poultry serving as scavengers for the excreta dropping to the ground below. The villagers do not normally wash after their daily call of nature nor do they take bath daily.

Rice, millet and other local field produce are the staple food of the people supplemented by meat when available. The meat of goats, cows, chicken and even dogs and elephants is eaten. The meat is boiled and not fried. While the meat provides the protein requirements of the people in the area, nutritional deficiency is not rare among man, women and children. Milk and milk products find a small place in the dietary over the greater part of the area.

Water supply is made available from spring water brought to the village by means of pipes. While the pipes are made available by the Agency the necessary labour is provided by the villagers. The water thus obtained is generally potable.

The Apathanis are most advanced agriculturally. They have a very good sense of forestation and animal husbandry. The Abos are most advanced in education. Each house pays Rs. 3 per year to Government as house tax and this is collected by the headman with the help of the village level worker and deposited in the Treasury.

Medical & Administrative Organisation in NEFA.—NEFA is a centrally administered area under the direct control of the Government of India through the External Affairs Ministry. The Governor of Assam is the *ex-officio* Agent to the Government of India. There is one Adviser to the Governor both for NEFA and NEMTA and two Commissioners, one for NEFA and the other for Nagaland.

The Commissioner for NEFA is the administrative head of the Agency. In each division there is one political officer in-charge of the overall administration of the area. He belongs to the Indian Frontier Administrative Service of the External Affairs Ministry.

The Director of Health Services and *ex-officio* Secretary Medical is the Head of Medical Department with his Headquarters at Shillong. He is assisted by an Assistant Director of Health Services, and a Malaria Officer at the Headquarters. Medical and Public Health Services are integrated.

In each District there is a D.M.O. in charge of both medical and public health work. He is assisted by a Malaria Inspector for anti-malarial work. A number of Health Units have been established in each Division. They are under the overall control of the D.M.O. The administration is run as a "single line" administration, the P.O. being the common channel of Communication between the administrative level at the headquarters and the various departmental heads in his division. The D.M.O. has no office of his own.

The Medical Officers employed in NEFA are proposed to be included in the Central Health Service. In addition to usual allowance the staff employed in NEFA gets 33-1/3% as NEFA allowance. The staff position in NEFA was reported to be as follows :—

District Medical Officer	Sanctioned Strength	Present Strength	Vacant
District Medical Officer	5	5	..
Civil Assts. Surgeon I	69	53	16
Civil Assts. Surgeon II	36	28	8
Ayurvedic Doctor	2	2	..
Compounder	105	93	12
Nurse (Sr.)	21	21	..
Nurse (Jr.)	19	18	1
Malaria Officer	1	1	..
Pathologist	1	..	1
Entomologist	1	..	1

In addition some medical staff of the Assam Rifle is working under the Director of Health Services. Their staff position is as follows :—

Civil Asstt. Surgeon I	97	22	75
Civil Asstt. Surgeon II	14	10	4

The comparatively large number of vacancies under this group are understood to be due to the NEFA allowance being admissible only when beyond the inner line.

There is complete co-operation between the staff under the civil administration and the medical staff of the Assam Rifles. These army officers form an integral part of the NEFA Organisation wherever there is a wing headquarter—not in sub-wing headquarters. Occasionally the medical officer goes to the health unit and helps the staff working there. In many of the health units in outposts, Army Rifle compounders come and work in health units. At Passighat it was reported that there was no Army Medical Officer and the army authorities are making use of the civil medical officers. Recently orders have been issued to utilise the services of Army officers in special circumstances.

General Rao observed that Medical Officer attached to border road units should be utilised in civil health units provided the local commander permits. If necessary, these doctors might be given some honorarium.

NEFA has one General Hospital at Passighat. It is proposed to construct five more General hospitals—one for each Divisional Headquarters. It has been proposed to have semi-permanent hill type buildings for these five hospitals at the sub-divisional headquarters.

72 health units are functioning in the Agency. The Health Unit provides both curative and preventive services to the people. The medical officer incharge of the unit has to go out on tour to the villages to render services.

The following is the staffing pattern of a health unit :

M. O.	1
Health Asstt. (Sr)	1
Health Asstt. (Jr)	1
Compounder	1
Medical Attendants	3

All health units are authorised to have a minimum of two emergency beds. There are health units with 8 or 12 beds. For such units the following additional medical personnel is authorised :

Nurse (Sr)	1
Nurse (Jr.)	1
Medical attendant	1

Each health unit covers a population of 20 thousand. These are special NEFA type health units with no sub-centres. It is proposed to establish 41 more health units during the III Five Year Plan at an estimated cost of Rs. 28 lakhs. The equipment and recurring expenditure for these health units would be provided under the C.D. Plan.

There are three Sanatoria functioning in the following places :

Pasighat	with 110 beds
Along	with 110 beds
Towang	with 20 beds

Main diseases :

NEFA is primarily faced with the following diseases :

1. Tuberculosis.
2. Malaria.
3. Goitre.
4. Worms.
5. Skin disease.

Sterility is also believed to be a sizeable problem.

T.B. :

T.B. is the greatest menace in NEFA. Three surveys for T.B. have been carried out in NEFA. In these surveys 1% sputum has been found positive. It is considered five times more than what obtains in other parts of the country. Gorkhas are particularly susceptable to T.B. Two B.C.G. teams have been working in the Agency. Because the communications are extremely difficult during monsoons, the B.C.G. teams conduct the compaigns in winter months only. Thus these teams work for six months a year. The composition of the teams was reported to be—

One Medical Officer.
One Vaccinator.
One helper.

It was pointed out that one T.B. medical officer for two technicians was a bit wasteful. It was considered better to have a team of six technicians and one medical officer and to concentrate vaccination work in one area. The A.D.H.S., however, pointed out that the population in one village is not sufficient to warrant the appointment of 6 technicians in one team. Further the villages were very much scattered and as the means of communications were so very bad it took more than one day for one team to go to another village. In the circumstances it was felt that the composition of the team could not be modified. The Administration envisages the completion of the partly built 50 bedded T.B. hospital at Margherita and establishment of 50 T.B. beds in nine health units and starting of two more B.C.G. teams. The Group felt that instead of putting up T.B. beds in each Health Unit it would be better to provide domicillary treatment for T.B. patients through the health unit with the help of health assistants trained in T.B. A specialist in T.B. could tour from one health centre to another and train health assistants in T.B. Patients in an advanced stage of T.B. and needing hospitalisation could be sent to the T.B. sanatorium.

It was also reported to the Group that the medical officers at the Health Unit generally did not associate themselves with the B.C.G. vaccination work. If there is an emergency call they go to the villages. It was suggested by the Group that B.C.G. vaccination should be attended to by the same persons who were employed at the health units.

Malaria :

Under the National Malaria Eradication programme 1½ units have been sanctioned for NEFA as against one unit in other places working for a population of a million. 44 anti-malaria teams covering 1513 villages 47106 houses and providing protection to about 2.28 lakh people in hyper endemic area are in position. The pattern of the composition of the anti-malaria team is different in NEFA. There is one Malaria Inspector, and 3 sprayers in each team. The spraying is done in January and March. Second spraying is done in October and December. On the basis of a survey undertaken in Passighat it transpired that 4½% of total disease in the area fell under malaria. Most of the positive cases were from outside NEFA. 5252 indoor and 277932 outdoor patients were treated during the year 1959. The incidence of malaria in NEFA was reported to be going down considerably.

Goitre :

To control endemic Goitre in the whole Agency a scheme was taken in hand to supply iodised salt in all the areas in complete replacements of ordinary common salt. It was arranged with the Salt Commissioner that 1475 mds. of iodised salt per month from Iodised Salt Production Centre at Samber Lake area would be supplied but due to packing restrictions no supply could be made in 1957-58. In the year 1958-59 only 590 maunds of iodised salt has been supplied. Salt distribution is done by the Director of Supply and Transportation. The Administration is incharge of distribution of salt. The A.D.H.S. made a plea for making sufficient quantity of salt available to the Administration. It would be possible to distribute it in the whole Agency. The cost of salt supplied was estimated to be 3 n.P. per head. The A.D.H.S. informed the group that there was no resistance on the part of people using it. On the basis of survey undertaken in the area it transpired that about 60% of the population in some areas suffer from goitre. The proportion of population suffering from goitre below 20% incidence was reported to be very low.

Sterility.—It was reported that sterility in the area was of the order of 10%. Research in this auspect is therefore necessary.

Water Supply and Sanitation.—Water Supply was mostly from spring water situated at the hill tops brought down to villages by means of pipes. While the pipes and other material was supplied by Government the villagers were called upon to give voluntary labour. Spring water is however, not always safe and on the basis of bacteriological examination carried out the water is at some places chlorinated. In some areas tube wells have also been installed but mostly spring water is used as drinking water.

In regard to sanitation villagers mostly use field or use "pig" latrines. There are no bore hole latrines.

Cholera, Diarrhoea and Dysentary are not much of a problem.

Smallpox.—Primary Vaccination and revaccination is done. It was observed that the lymph supplied was not available in sufficient quantity and there were also inadequate refrigeration arrangements. It was suggested that dry lymph would be most suitable for NEFA area. During 1959 there were 13253 primary vaccinations and 16797 revaccinations. There were only 2-3 cases of smallpox reported last year and those too were among the administration staff.

There is no filariasis in NEFA.

Hookworm and round worm are most rampant in NEFA. In some villages 20% to 60% of the population suffer from worms. Skin diseases are due to unhygenic condition. 13004 patients of scabies and 8637 cases of other skin diseases were treated during 1959.

Vital Statistics.—There are no arrangement for recording vital statistics. Formerly it was being done by the school teacher. Health units are not concerned about vital statistics. It was suggested that recording of vital statistics was very essential and the agency of the teachers against payment of honorarium should be instituted in the NEFA area.

EDUCATION TRAINING AND RESEARCH

Training facilities of medical officers in D.P.H. course and in nutrition have been provided at the A.I.I.H.P.H. Calcutta. Facilities for doing condensed M.B.B.S. course for service licentiate doctors have been provided at the Assam Medical College. For malariology training facilities have been provided at the Malaria Institute of India.

For the regular M.B.B.S. course seats have been reserved in the Assam Medical College, Dibrugarh. For Senior Health officers orientation course seat are available at the Singur Training Centre.

At Passighat there is a Health Training and Research Centre under the A.D.G. (Training and Research). This was established in 1956. Here training is imparted to the medical and health personnel. To this centre a 50 bedded General Hospital with 30 T.B. beds and Pathological Laboratory have been attached. The Centre provides training facilities for the following health personnel.

(1) **Orientation course for Doctors.**—This course is meant for L.M.P. doctors who constitute a major percentage in NEFA. Two courses are conducted in a year of 8 weeks duration. During this period doctors are taught the latest trend in health and medical field with special reference to public health work, laboratory investigation and survey methodology. 16 doctors have so far been given this course. Some more have also been trained in V.D. and Leprosy work in this institution.

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(2) **Senior Health Assistant Training.**—This is a 3 months' course. It is meant to give public health orientation training mostly to malaria inspectors and sub-malaria inspectors, to make them multipurpose health assistants. So far two batches of trainees have been trained.

(3) **Junior Health Assistants' Training.**—This is 6 months' training course meant exclusively for local boys to make them health assistants fit to undertake public health work, first aid and home nursing work. The basic qualification is 6th to 7th class.

(4) **Junior Nursing Training.**—This training lasts for two years meant exclusively for local girls to train them as auxiliary nurse midwives. The basic qualifications is 6th class. The successful girls are registered under the Assam Nursing Council. The trained girls are attached to hopsitals. 12 girls are under training of which 6 have already completed training in November last (two of them are employed and another four will soon be absorbed). Six girls are taken for training at a time. It is very difficult to get girls to

this training course. In addition to giving technical training, girls are educated in English and Hindi.

(5) **Orientation course for midwives.**—It is a four months training course. This course is meant to train midwives in nursing so as to enable them to work in wards. The first batch of trainees will complete training in the current year.

(6) **Laboratory technicians.**—It is one year course which the Administration is contemplating to start. This is also for local boys to train them in clinical laboratory work so that they will be of great value in the various health units where routine clinical examinations are necessary.

(7) **Research.**—To the Centre a small research unit has also been attached. The unit receives grant-in-aid from the I.C.M.R. Research on diseases, population trend, skin disease and malaria has been conducted, in the past years.

GENERAL HOSPITAL WITH T. B. WING AT PASSIGHAT

This hospital was set up in 1912 at Passighat in a temporary structure. The foundation stone for the present building, built at a cost of Rs. 2 lakhs including the T.B. wing was laid by the Governor of Assam in March, 1958 and now the building is almost complete. It is a 50 bedded hospital with 30 T.B. beds attached to it. These beds have been distributed as follows :

(a) For NEFA staff 4 beds (2 males and 2 females)	4 beds
(b) General male 8 surgery 10 medicine	18 beds
(c) General female beds 8 general case 8 gyneacology	16 beds
(d) For children	8 beds
(e) Maternity	4 beds
TOTAL	50 beds

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It was reported that 70% of the patients admitted to the hospital belonged to tribal areas.

The staff at the General hospital consists of one doctor incharge who is also A.D.H.S. (C.A.S. Gr. I) one male M.B.B.S. doctor, one lady doctor and one T.B. specialist. They are assisted by one matron, 6 senior nurses and four student nurses. At present only 4 posts of senior staff nurses are filled. The para medical staff consists of 23 persons including two female attendants. There are 3 compounders working in the hospital of whom one is incharge of Central

Medical Store and 2 work in the out-patients department. The hospital caters to the population within a radius of 15 miles from Passighat. While the out-patient department is open in the morning and evening, emergency service is provided for 24 hours. The daily attendance at the O.P. Department has been from 100 to 150 patients. During 1959, 13401 new cases and 12752 old cases were treated. In the in-patient department 511 cases were treated 250 being males, 200 females and 61 children. It was reported that the number of deliveries conducted at the hospital were few. During 1960 only 36 deliveries were conducted at the hospital. Most of the women get their deliveries conducted at their own places by the elderly women and only abnormal cases of deliveries were brought to the hospitals. The help of Army Medical Officers is availed of for operations at the Hospital.

It was observed that most of the beds were vacant. It was pointed out that the vacancies were due to the harvesting season when men and women, even though they were ill would like to go to their work and collect foodstuff for the rainy season. Otherwise there was full occupancy of the beds. There is a great demand for T.B. beds on account of heavy incidence of T.B. in the area. It was considered essential that a T.B. specialist should be attached to the General Hospital for T.B. cases. This doctor could be utilised for training local T.B. workers to go in the interior and render domicillary service to T.B. patients.

Staff quarters.—To the hospital are attached staff quarters for the medical officers working in the hospital. Nurses and others working in the hospital were also given quarters. The cost of living in Passighat was reported to be pretty high as most of the goods have to be brought from outside.

Pathological Laboratory.—The Pathological Laboratory, has carried out routine clinical tests which included examination of blood, stool, urine, sputum. For want of electricity working of the laboratory is very much limited. It was reported the hospital would soon have its own generator and electricity would be made available.

The posts of Pathologist and Entomologist sanctioned four years ago have not been filled up (inspite of the pay scale of Rs. 250 to 600, Rs. 100 N.P. and 33-1/3% NEFA allowance in addition to other D.A. allowance). General Rao offered to consider the posting of an Army Entomologist in NEFA, if asked.

Medical Stores.—Medical Supplies are obtained mainly from the M.S. Depot, Calcutta. The actual supplies from the Depot were reported to cover only 1/3 of what was indented. Invariably the indents had to be repeated and that caused delay. Emergency supplies were obtained from the Central Medical Store Depot at Jorhat, but that too did not meet the requirements of the hospital. The A.D.H.S. was authorised to purchase medical stores worth only Rs. 100 at a time, and that too after calling for tenders.

INH and Streptomycin and other antibiotics could be given to all patients free of charge.

T.B. Sanatorium, Passighat:

It is housed in a very old building which formerly housed the General Hospital. Very shortly this would be moved to the General Hospital where a ward for the purpose is being constructed. To the sanatorium is attached an occupational therapy centre where boys and girls were engaged in weaving. Yarn was supplied by the Centre and the amount recovered from sale proceeds of the products less the cost of the yarn is paid to the patients. This training also enables the patients to earn their living after leaving the Sanatorium. The doctor incharge of the Sanatorium pointed out that the patients were often not accepted back in the community on discharge. Rehabilitation of these patients is a serious problem. They can not be allowed to do hard work and the community would not accept them unless they prove to them of some help. It was pointed out that the training provided at the centre enabled the patient to earn something and on that account some of the patients were being accepted by the community. The average stay of patients in the Sanatorium was four to six months. The flow of patients to the Sanatorium was increasing. Last year there were 41 indoor patients and 164 outdoor patients attending the sanatorium.

H. D. Sanatorium:

This is one of the oldest leprosy colonies in the Agency having facility for 80 patients with separate arrangements for their children by way of a preventorium and observation wards. At present there are 60 patients and 15 children. Except for the two Assam Rifles jawans and one member of staff all others are local tribesmen. The colony is a miniature village with a gam bara and a Kebong of its own. There is a school for children and a cottage industry centre, to help the patients in occupational therapy. Men and women patients often marry after they join the colony. An attempt is made to isolate their children. In the event of death of the parents the children are removed to the nearby hostel and arrangments for their education etc. made. To the leprosy colony is attached a vast piece of land where the patients do their own cultivation and produce their own food stuff, vegetables and maize. The enterprise is self-sufficient. 700 mds. of maize was produced last year. There is a Leprosy Officer

(C.A.S.I.) one supervisor, and one male nurse and a compounder attached to the colony. All children are B.C.G. vaccinated.

NEFA Government School:

The Group visited the High School at Passighat where education is provided to students, both boys and girls free of charge, including books etc. Both boys and girls lived in hostels. There had been so far three batches. The last batch consisted of 10 students and all of them got through. This year there were 17 students appearing for the matriculation examination of the Assam University. In the M.E. examination a student of the school stood first. In addition to English Assamese was taught. Hindi was an additional subject.

Special problems of the area:

It was pointed out by the Administration that non-availability of medical men in the far fetched area where the climate in 4 to 5 months was not favourable due to constant rainfall was a great problem. To attract medical men to join service in NEFA, while the proposed inclusion of medical men in the Central Health Service was a step in the right direction, it was felt that the NEFA allowance could be raised from 33% to 50%.

Facts & Figures:

In NEFA there is one hospital for 6,000 population.

One doctor for 4946 population.

One Nurse for 12599.

One compounder for 4946.

One bed for 850.

Infantile mortability—330 per thousand (pretty high).

In 1959 there were 78 hospitals.
73 doctors.
36 nurses.
92 compounders.
278 beds.

2.1 beds per thousand.

Out door patients 219.07 per thousand.

Indoor patient 4.15 per thousand.

The health units are without midwives and health visitors. There is no proposal to train health visitors or nurses. Nurses training is provided to local nurses.

44 anti-malaria teams are working in the area. They provide protection to 2.28 lacs of population.

Three Hansen Diseases Sanatorium fourth with 32 beds has been sanctioned.

One T.B. hospital with 30 beds attached to general hospital.

One Central Med. Store for NEFA at Jorhat Pathological Lab. attached to General Hospital.

NAGALAND

Nagaland consists of three Districts—Kohima, Mokokchung and Tuensang. There are 24 hospitals and 30 dispensaries. The number of medical officers employed in Nagaland is 81.

The most prevalent diseases are. Malaria, Gastrointestinal disorders; Respiratory Disorder; Urinary diseases, Infectious diseases; Goitre; Skin Diseases and V.D. There is no Filarisis or Cholera.

Malnutrition is not common. Malaria, Goitre and Leprosy are particularly common in certain parts of Nagaland.

Total No. of beds in the various hospitals 546.

Beds per thousand:	1.46.
Doctor per thousand:	0.25.

During the III Five Year Plan the Administration proposes to start 7 new dispensaries, convert 2 existing dispensaries into hospitals, train, 7 doctors, 2 compounders and 12 dais; complete 7 dispensary buildings, one T.B. hospital, and 2 nos. of market stalls. It is proposed to provide water supply to 52 small towns and villages covering a population of 1.96 lakhs. 94% of the total population has been covered in first round of D.D.T. spray. The second round is stated to be in progress.

62,000 people have been B.C.G. tested and 31,000 people vaccinated. From a survey undertaken to find out the incidence of malaria, it has been found that malaria is prevalent in almost all parts of the Nagaland. T.B. is a fairly big problem and the number of open cases is quite large.

Water Supply is mainly from springs. Water is brought down by means of pipes and stored in tanks and made available to the people. Water supply is not a problem in the area.

The Naga Villages provide generally a fairly sharp contrast to the villages, seen in the NEFA area.

Individual houses are not scattered as in NEFA but are in clusters of some size with the result that the open space round each house is limited and the general cleanliness is not the same as in the villages seen in NEFA. Since the houses are closely built, one over the other, little alleys have come up which form the repository for garbage which collects all over the place. There being no sweepers and no practice of scavenging these lanes as well as the compounds of the houses become dumps of refuse which remain there except when once in a while the village decided to have a clean-up campaign. In the few villages visited by us the houses were not raised on platforms as in NEFA and there was no provision for sanitary facilities, although pigs and poulty form an essential part of each household. Fields and places outside the villages are made use of for answering the call of nature. One of the results of this is a high rate of helminthic infection. The general plan of the houses is otherwise about the same as in NEFA except that corrugated iron sheeting is very popular for the roofing of the huts. Water supply in almost all villages if any size is from springs brought through pipes to a reservoir in the village from which it is drawn off by taps.

General state of nutrition appeared to be good. On the other hand, it was pleasing sight to see some of the specimens of good physical development amongst the Naga Youths. The rearing of cattle is not popular but terraced cultivation with very well arranged irrigation appears to have been raised to a fine art amongst Nagas. The institution of a village headman who generally occupies the position not so much by virtue of his worldly profession as by force of character or retorical skill obtains in the Naga villages also. The village headman is a respected individual who counts for a lot. The medical man has a place in the eyes of the Naga people which perhaps no other agent of the Administration enjoys. It is thus that even in very disturbed days the Medical Officer could walk with impunity into any village. It is stated that even in the case of armed forces wearing of the uniform was forgiven if it was known that the person concerned was an army doctor.

Naga Hospital, Kohima :

This hospital was presented to the Nagas by the Government in recognition of the services rendered by the Nagas in withholding the Japanese invasion during the World War II.

The construction of the Hospital was started in 1946 by the Government of India. The total expenditure on the building was about 36 lacs of rupees.

The Naga Hospital caters to both indoor and outdoor patients. The average attendance at the outdoor department was reported to be on the average 30-40 patients a day between the male and female out-patients departments which are separate. Total number of patients treated outdoor was reported to be 5,000 a year. The rather low outdoor attendance is ascribed to the existence of an M.C.H. & a Health Centre in the village.

The medical staff at the hospital consists of a Medical Superintendent, four Male Asstt. Surgeons, Gr. I (including one eye specialist), two lady Asstt. Surgeons, I.

The hospital has 178 beds of which 86 are for males, 56 for females 12 for maternity cases and 18 infectious wards. The infectious ward and maternity ward are outside the premises of the main hospital. There is a small paying ward attached to the hospital where a sum of Rs. 5 per day inclusive of food is charged. It was reported that practically all beds were occupied during the year. There is no anaesthetist attached to the hospital nor a radiologist for the X-Ray Plant. The Medical Superintendent and his assistant have to do all radiological and surgical work themselves. The Medical Superintendent also looks after the Central Medical Stores at the hospital.

The Medical Superintendent informed the Group that the M.S. Depot, Calcutta was only in a position to supply 1/3 medical stores to what was indented on them. The rest of the supplies were either obtained from Jorhat Medical Stores Depot or directly from recognised dealers in Shillong or Gauhati.

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The annual expenditure of this hospital is about Rs. 2 lacs. The most common diseases, are :—

Malaria, Intestinal Worms, Skin diseases, Digestive disorders including peptic ulcer, Dysentery, Goitre, Pneumonia, Bone T.B., Pulm. T.B. etc. Residential accommodation is provided to all members of the staff including the nursing staff. Lower staff is only partly provided for. The Medical Superintendent of the Hospital is also the Inspector of Health Services, NEFA.

There are two lady doctors, a matron, nine staff nurses and 9 student nurses. There is a three years nursing course recognised by the Assam Nursing Council. All the girls admitted to the course are non-matriculates, & have to be given instruction in English as well as Assamese. They have, however, to take their examination in English. The course was started in 1956. Two to three batches have completed the course. The pass percentage has been from 50 to 100. There are 13 seats for the nurses course. For these sometimes 30 to 50 applications are received. But most of the students are of 8th standard. Selection is made by interview. It was brought out during the course of discussion that while the training course of nurses is of three years' duration and of the same standard as obtaining in Assam, but because the students were not matriculate, they were called Junior nurses and not senior nurses. Sister tutor attached to the hospital gives training to nurses. She is also in-charge of O.T. work. She got her training in Dibrugarh. For the training in Sister Tutor one nurse has been sent to New Delhi.

Training in midwifery is given separately. The students go for practical training in hospital, where fair number of cases become available. There were 130 maternity cases reported during the last year. It was reported that Naga women do not like to come for midwifery except for abnormal cases. Normal cases are attended to by old women in the villages.

In regard to availability of pharmacists the hospital authorities are facing the difficulty of finding matriculates required by the Assam Government regulations. In a backward area like Nagaland matriculates are few with the result that sufficient number of students did not become available. The Administration has requested the Assam Government to relax the minimum basic qualifications because it is very difficult to get students.

In regard to training of health assistants and sanitary inspectors, it was suggested that a training centre similar to the one in Passighat could be started in Kohima also where training to all sorts of health personnel could be imparted.

Nagas do not believe in Family Planning. Families generally have 8 to 9 children. The children, men and women are generally well nourished. They take plenty of grain, a good deal of protein and fruits. They do not take sweets. Food is mostly boiled and not fried. Skin diseases are prevalent because of unhygienic conditions. The Nagas are generally long lived (70.3) & the incidence of hypertension, diabetes and cancer is believed to be low.

All doctors get 33% Nagaland allowance on pay scales equivalent to Assam. The minimum pay including all allowances came to about Rs. 500 per month. All the medical officers at the Hospital were Assistant Surgeons Grade I. The local doctors were mostly L.M.P. while those from outside Nagaland were M.B.B.S.

The scale of pay of nurses is 70-4-150. They get D.A. Rs. 21, Special Pay Rs. 50, Messing Rs. 30, and Washing allowance Rs. 2 every month. The total emoluments received by nurses thus came to Rs. 173 per month. Nurses manage their own mess. Student nurses get Rs. 45 to Rs. 50 every month. There is a separate hostel for them.

In regard to the set up of the Malaria organisation the Malaria Officer informed the committee that there were three special malaria units, one for each District. Under each unit there are 6 field teams composed of 8 field workers, under a Malaria Supervisor. There is no Entomologist attached to the Malaria organisation. It was suggested by Group that it was very essential that some arrangements be made to collect blood slides of suspected cases of malaria, and investigation made whether the cases were actually malarial. Every dispensary should be supplied with glass slides and instructed to take slides of the patients suspected of malaria for examination at a central laboratory. The incidence of malaria could be correctly known only thus.

The hospital is a spacious, well-planned building with fairly well-equipped operation theatre, a clinical side room and an X-Ray Plant. Although the beds were reported to be mostly occupied and it was stated that major and minor surgery was being done in the hospital, the Group came away with the feeling that the hospital was not being put to the best use. Apart from cases of fracture, peptic ulcer, tuberculous lympthandentis and such other cases seen in the wards, it seemed that the majority of them were labelled as dyspepsia and indigestion etc. The team consisting of the Medical Superintendent, two male doctors and two women doctors are doing their best but this did not, however, amount to much in the absence of any specialist advice or guidance. One of us (Dr. R. V. Sathe) for example, on examination found one of the cases to be suffering from typical labour Pneumonia, which was being indifferently treated as a case of simple fever. With the investment made on the hospital and with the facilities available, it would therefore appear to be false economy to deprive such a hospital of the services of the minimum number of specialists. It was felt that at least one medical specialist, one surgical specialist, one anaesthetist, one radiologist and one medical officer trained in clinical laboratory work should be provided for this hospital, if the investment made on it is to be worth-while. There also appears to be no reason why the army specialists attached to the hospital in Kohima could not be called upon to assist the Civil Hospital staff as and when required. This question was discussed with the A.D.M.S. who was not only keen on making available his specialists but had actually asked them to establish contacts with the authorities of the Civil Hospital for this purpose. His feeling was that overtures made by his specialists in this matter had not received welcome response from the hospital authorities. This question was also discussed with the G.O.C. and with the Commissioner who both felt that with the close liaison that exists at all levels between the civil and the military administration in the area, there is no reason why specialist skill available in the armed forces should not be placed at the disposal of the Civil Hospital. It was strongly felt that at least until such time as specialists posts are created for the Kohima Hospital and filled up, arrangements should be possible under which the army specialists at least on the medical and surgical side should be able to give part of their time to the needs of the Civil Hospital. It was noticed that a case of perforated gastric ulcer was stated to have been opened and the perforation sutured. The case was already showing signs of recurrence a week after the operation. With the help of a competent surgeon such a situation could be avoided. There is no blood transfusion service in the hospital as the Nagas are most reluctant to part with their blood even for their near and dear ones. Liaison with the army is likely to help in this direction also.

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REPORT ON THE EMPLOYEES STATE INSURANCE CORPORATION

Historical:

It was in 1948 that the Employees State Insurance Scheme was started by the enactment of an Act in Parliament when the Hon'ble Mr. Jagjivan Ram was Minister in charge of Labour. Although the Act was passed in 1948, the Scheme could not be introduced till four years later. The main object of the Scheme is social security and it has been introduced in all the important cities and towns, particularly where a large labour population is present. The Scheme at present is in force in 12 States and in the Union Territory of Delhi. These areas are served by 79 centres. The Employees State Insurance Corporation has set up 13 Regional Officers, 96 local offices, 32 sub-local offices, and 24 pay offices with a total number of 2,954 employees on the staff of the Corporation as on 31st March 1959 to work the Scheme for the insured persons and their families.

The Corporation has been meeting once or twice in a year and its working has been guided by the Standing Committee, the Medical Benefit Council, the Regional Boards and the Local Committees, The Chairman of the Medical Benefit Council is the Director-General of Health Services.

Main features of the Scheme:

The Scheme applies in the first instance to all non-seasonal factories using power wherein twenty or more persons work. It covers all employees who are employed directly or through a contractor on any work of the factory, whether in a manual or non-manual capacity, on a remuneration not exceeding Rs. 400 per month.

The different kinds of benefits which the insured persons are entitled to get are :

(a) medical benefit in kind,
(b) sickness benefit,
(c) maternity benefit,
(d) permanent disablement benefit,
(e) temporary disablement benefit, and
(f) dependants' benefit in cash.

In addition to the above statutory benefits, the Scheme also provides for the following extra benefits :

(a) extended benefit for tuberculosis,
(b) artificial limbs and dentures,
(c) extra maternity benefits,
(d) family medical care.

So far as facilities for hospitalization are concerned, at present provision is made largely in general hospitals or in nursing homes by reserving a certain number of beds and, in some cases, by building annexes in these hospitals for a certain number of patients. In two places only are separate hospitals for insured persons available, one in Madras City and the other in Bangalore where in rented buildings about 80 beds are provided.

The annexes to the existing hospitals are as follows :

Delhi.—Annexe of 50 general beds in the Irwin Hispital and an annexe of 30 beds in the Tuberculosis Hospital.

Hyderabad.—Ward of 6 beds at the Tuberculosis Hospital.

Nagpur.—Annexe of 25 beds in the Mayo Hospital.

Coimbatore.—Annexe of 84 beds in the Government District Headquarters Hospital.

The Corporation has laid down that the scale to be adopted for inpatient treatment is—

1 bed for 800 employees in a general hospital,
1 bed for 1,000 employees for tuberculosis, and
1 bed for 500 insured women for maternity cases.

A number of mobile dispensaries have been opened throughout the implemented areas. The Scheme contemplates the establishment of dispensaries working round the clock. It has also contemplated the payment of conveyance charges to insured persons who are required by the Medical Board to appear before the specialists. Free ambulance transport or a special conveyance is made available to insured persons referred to hospitals or special diagnostic centres in relation to the nature of the illness and where, in the opinion of the doctors, transport by any other means would be prejudicial to the health and well-being of the patient.

A feature of the Scheme is the protection given to insured persons from dismissal or discharge by the employer during the period of sickness. Normally the period of protection is 6 months; but in case the persons are under medical treatment for tuberculosis, leprosy, malignant or mental diseases, this protection is available for a period of 12 months.

It may also be mentioned that the Corporation is remitting the sickness and other cash benefits by money order where the employee is not in the station and whenever a request is received from the injured person.

The latest figures available show that about 14.14 lakhs of employees have been covered by the Scheme and it is expected that by the end of the II Plan period, the Scheme would be extended to all centres with an industrial population of 1,000 or more. If this hope is realised, nearly 2.4 million employees would come under the operation of the Scheme. With the inclusion of their families, the number of beneficiaries will be 9 to 10 million.

Financial aspect:

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The contributions to be paid by the employees and the employers are governed by Schedule I of the Employees State Insurance Act. The rate of employers' special contribution is as follows:

In implemented areas—1¼% of the wage bill.

In non-implemented areas—¾% of the wage bill.

A decision to raise the rates of employers' special contribution from 1¼% to 3½% in implemented areas and ¾% to 1¾% in non-implemented areas was considered by the Central Government. However, the enhanced rates suggested have not been brought into effect so far.

So far as employees are concerned, the contribution is calculated with reference to their average daily wages and ranges from Re. 0-2-0 to Rs. 1-4-0 per week. Employees, whose average daily wages are below Re. 1, are exempted from contribution while the Employer's contribution has to be made on the usual scale. The upper limit for an employee to come under the Scheme is an income of Rs. 400 per month.

Points brought to the notice of the Commission :

"I have considered the several points that were brought to my notice either in the memoranda submitted or in the evidence tendered in person. I have referred to some of the important representations made in the course of this report.

Types of Benefits :

Under the Employees State Insurance Act, 1948, the following benefits have been vouchsafed to the insured persons as already stated above.

(1) Sickness benefit : This is given in the shape of periodical payments to the insured person in case of his sickness as certified by a duly appointed medical practitioner.

(2) Maternity benefit : This is given to insured women in case of confinement during a period of twelve weeks of which not more than six shall precede the expected date of confinement.

(3) Disablement benefit : This is given to an insured person suffering from disablement as a result of an employment injury sustained as an employee under the Act.

(4) Dependants' benefit : This is given in periodical payments to such dependants of an insured person who dies as a result of an employment injury, as are entitled to compensation under the Act.

(5) Medical benefit : This is medical treatment for and attendance on insured persons.

The main purpose of the Act is to ensure for the employee both medical attention and treatment and a certain amount of cash benefit during the period when he is unable to attend to his work. The cash benefit given is governed by certain conditions. The total number of days in a period of 365 days for which an employee is entitled to receive this cash benefit is calculated as 56 days.

Medical benefits :

According to the Scheme, the employees are assured of medical attention in the form of out-patient treatment in a hospital, dispensary, clinic or other institution or by domiciliary visits or by hospitalization where it is found necessary. Where such medical benefits are extended to the families of insured persons, they are also entitled to receive the benefits.

The medical benefits are given through the medical officers employed by the State or through the panel doctors who are employed by the Corporation. The Question has been raised at more than one centre whether the system of medical benefit should be through the service medical officers employed by the Corporation or through panel practitioners enrolled for this specific purpose. Opinion is divided both in the employees' associations as well as in the employers' associations in regard to this. It is realised that, under present circumstances and with the paucity of medical personnel being available in some areas, the system of panel practice may have to be continued.

A third method of medical benefit is by using the facilities in certain what are known as 'utilisation dispensaries'. These are dispensaries which have been maintained by certain private firms and, after inspection in regard to their suitability, are recognised by the Corporation as dispensaries under the E.S.I. Scheme. The medical officers in these dispensaries are employees of the respective firms and the methods adopted are practically the same as for the panel dispensaries, the dispensaries being given the benefit of the capitation fee to cover the cost of medicines utilised in such dispensaries. The number of utilisation dispensaries are limited and they are satisfactory for the purpose for which they are being utilised.

Panel practice:

Under this system, a certain number of employees are allotted to a panel doctor, it being understood that the maximum number should not exceed 1,000. The panel doctor is expected to have his own consulting room and dispensary, he being generally a private practitioner who has already the facilities for medical attention at his own consulting room or dispensary and for giving the ordinary medicines (not patent medicines). The panel doctor is paid Rs. 6 per annum per insured employee in all areas other than Bombay and Howrah where the emolument is Rs. 6.50 nP. per employee.

Under the system of panel practice, it is expected that the doctor will requisition diagnostic aids such as may be found necessary by sending the patient with a written note to one of the diagnostic centres and where necessary refer the patient to a specialist for advice as well as for the prescription of the more costly patent medicines which may be indicated for the particular disease.

Service system:

In the case of service doctors, provision is made for all the ordinary laboratory tests such as are indicated, *viz.*, urine, blood, sputum, etc., and the dispensaries where service doctors attend have also the necessary testing apparatus including a microscope. Where the total number of employees attending the particular service dispensary is 4,000 or over, a technician is provided. The service doctor can send the patient for any special investigation that may be required to a hospital and can also direct the patient to a specialist when, in his opinion, specialist advice and prescription may be needed.

The service system is utilised at the following places :

The Centrally administered areas of Delhi ; Akola, Hinghanghat, Nagpur ; Burhanpur, Gwalior, Indore, Jabalpur in Madhya Pradesh State ; Hyderabad and seven other industrial centres in Andhra Pradesh State ; six industrial centres in Kerala, *viz.*, Alleppey, Quailon, Trichur, Ernakulam, Alwaye and Trivandrum ; Madras city and suburbs, Coimbatore and suburbs, Ambasamudram, Madurai, Sivakasi, Rajapalayam, Tuticorin, Tiruppur, Salem, Mettur and Udumalpet in Madras State ; Jaipur, Jodhpur ; Bikaner, Bhilwara, Pali-Marwar, Lakheri, Beawar, Sawai-Madhopur, Dholpur and Sriganganagar in Rajasthan State ; Kanpur, Lucknow, Agra Sharanpur, Allahabad, Varanasi, Rampur, Aligarh, Hathras, Bareilly, Shikehabad, Ghaziabad, Mirzapur, Modinagar and Sahajanwa (Gorakhpur) in Uttar Pradesh ; Patna, Katihar. Monghyr and Samastipur in Bihar State ; Bangalore in Mysore State ; and Gauhati, Tinsukhia, Makum, Dhubri and Dibrugarh in Assam State.

The panel system is in force in the following places :

Punjab ; Greater Bombay ; Calcutta and Howrah District in West Bengal.

The State Government of Madhya Pradesh has changed over to the service system in Ujjain and Ratlam. The Punjab Government decided to change over from panel system to service system at Bhiwani.

In Coimbatore, both the service system and the panel system are in force.

It has already been stated that in view of the non-availability of sufficient number of medical personnel, it may not be possible at present to change from the panel system to the service system in certain areas. At the same time, it has to be mentioned that there are certain deficiencies in the panel system which must be corrected and improvements made if the panel system is to function effectively in the interests of employees.

The visits paid in Bombay and Calcutta to the various consulting rooms of the panel doctors have indeed been a most disappointing experience.

Bombay :

In Bombay, the panel practitioners have so-called consulting rooms which are in small places in the main thoroughfares and are not dissimilar to the cubicles where small shops might have been located. Several of these places were visited by me and it cannot be said that there are facilities such as would be expected for proper consultation and examination of the employees. While realising that the availability of space in Bombay is a problem and is known to be extremely difficult, it cannot be said that many of these places where panel practitioners are supposed to look after the interests of the employees can be said even remotely to approximate to what a consulting room ought to be. This aspect has to be prominently taken note of when the Scheme, as is expected, will shortly be extended to the families of these employees. There can be no doubt that in the existing condition it will not be justifiable to recognise many of these places as fit for panel practice or for any form of practice.

It may incidentally be mentioned that it would appear that in Bombay, there is provision for a weekly holiday, that is, on Sundays, when all these dispensaries or consulting rooms are closed. Such a practice does not exist in other places. In those areas where the service practitioners are employed, a half day is given once a week as holiday and, even granted that in the panel areas also such a provision is desirable, it ought to be regulated in such a way that the employees are in a position to obtain some sort of treatment from at least half the number of panel consulting rooms.

In this connection, reference may be made to the fact that in Bombay, there are several kinds of 'medical practitioners' who are on the panel.

There are :

(1) The Ayurvedic Vaids,

(2) The practitioners qualified from the Integrated School of Medicine.

(3) "Registered practitioners", an expression which is peculiar to Bombay only. This group represents all those who have been practising any form of medicine prior to the introduction of the Registered Practitioners Act of Bombay somewhere in 1947-48.

(4) The practitioners who hold the degree qualification or the licentiate qualification in modern medicine.

It may also be mentioned that, in Bombay, there are certain diagnostic centres where the practitioners can send the patients for all tests except the very routine tests and, as the panel practitioners have no microscopes, it is presumed that tests with reference to microscopic examination have to be made only at the diagnostic centres.

Calcutta & Howrah:

The position in regard to panel practice here is more or less similar to what obtains in Bombay. In some respects, the premises where the panel practitioners are supposed to practice are even more disquieting to view. Some of these places are not merely in slum areas but are actually slums themselves.

A notable feature in Calcutta is that it is rare to find the board. 'E.S.I. medical practitioner' which is expected to be put up, with timings indicated at every such dispensary, whether it be of a panel doctor or of a service doctor.

Although the panel doctors are expected to be at the consulting rooms between 7 and 10 in the morning and between 3 and 5-30 in the afternoon, or other fixed hours which are notified for each area, going round in the morning hours between 8 and 9, it was found that there was no panel doctor available in several places. In Coimbatore, out of about 10 clinics visited, 6 clinics had not the panel doctors present between the hours of 8 and 9 a.m. The explanation was offered on behalf of some of the panel doctors that as the visit of the one-man Commission was notified at 8-30 a.m., the panel doctors were not present earlier. This irregularity of attendance even on a day when the one-man Commission was said to visit the panel dispensaries is itself sufficient to prove that the panel doctors have not been available between the hours of 7 and 10 a.m. as required. The seriousness of this sort of irregular attendance will be obvious when it is realised that an insured employee has to be present at a mill or factory by a particular time, in many cases between 7-30 and 8 a.m. And if for any slight ailment, he comes to the panel doctor and finds he is not there, he will necessarily have to lose a day's attendance unless it is certified that it was necessary from the point of view of his condition to be absent.

This is one of the charges made by Employers' Associations that owing to irregular attendance of the panel doctors, the employee has necessarily to be treated as one who is entitled for a sickness benefit, as he loses the day's attendance for no fault of his.

To the extent to which dispensaries manned by service doctors were visited, the absenteeism was not noted. But the regularity of attendance is equally important, if not more important, in the case of service doctors because a larger number of employees (about

2000) are allotted to a service doctor as compared with the number assigned to a panel doctor whose maximum is 1000

I am concerned with the proper care of the employees and with the medical attention they ought to receive, whether by panel doctors or by service doctors ; and I must with regret say that I am not convinced that the Scheme ensures prompt and proper attention by the medical personnel concerned. In some cases. it is not the fault of the panel doctor or the service doctor because the conditions are such as not to enthuse him to the type of attention that one is entitled to expect from him.

Having indicated that both the service and panel systems may be necessary for some time and, particularly in places like Bombay and Calcutta, it may not be possible to change over from one to the other for several years, I suggest that the following steps should be taken to improve the standard of medical attention. I am not now trying to evaluate the merits of one system as against the other. Both panel and service will work only if there are definite conditions which are strictly implemented irrespective of other considerations. I must state that I was disappointed at the amount of attention and care bestowed by the administrative medical officers of the Employees State Insurance Corporation both in Bombay and in Calcutta. It appeared to me that they had not taken due note of the requirements of the panel employees nor represented to the authorities concerned the conditions under which much of the practice is being followed.

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Recommendations :

I have come to the conclusion that the best way in which effective medical care can be given to the employees without unduly harrassing them or delaying treatment by referring them from the consulting room to the diagnostic centre, to the specialist and to the chemist's shop is to adopt a more rational basis for working the Scheme. I would suggest that the panel practitioners chosen must be properly screened both in regard to their qualifications as well as in regard to the facilities they have for attending to the employees at their clinics. In a large number of cases in Bombay and Calcutta, it may not be possible for the practitioners to have such facilities. It seems to me that the only satisfactory way of ensuring good and prompt attention is for the Corporation to construct polyclinics where 6 to 7 of the panel practitioners may attend on employees in the consulting rooms set apart where they can also treat private patients and with facilities in these polyclinics for most of the diagnostic aids. Such a polyclinic may have one or two service doctors who would be responsible for the proper running of the departments of the polyclinic and for issuing ordinary medicines and such of the special medicines as can be issued. The panel doctor will be responsible to pay domiciliary visits to give the patients the attention he is required to give in his panel practice.

It will be more easy in a polyclinic for a panel doctor to ask a brother doctor to attend to his cases on any particular day when, owing to sickness or other inevitable cause, he is not able to be present and the employee need not be sent in such a contingency to a distant dispensary for the treatment that may be necessary. Also, in emergencies, the service doctor will always be available and in a polyclinic of this nature, it may be desirable to have two service doctors and, if families of the employees are to be included under the Scheme, one of the doctors must be a lady doctor. It may also be mentioned that quarters for the service doctors should be made available so that on all occasions emergency cases can be treated. I was pleased to see that in Hyderabad such a polyclinic has been constructed and is serving a very useful purpose. My suggestion for Calcutta and Bombay would be that a series of polyclinics of this nature should be constructed or buildings acquired or rented if necessary so that the practitioners may be given all facilities not only to look after the employees but also, as is the case now, to look after any private patients that they may have.

In Calcutta, it was suggested that for every 2 mile area, there will be a polyclinic and for every 2 polyclinics, there will be a clinical diagnostic centre and for every 5 polyclinics, there will be a special diagnostic centre, and so on.

Pending the construction of polyclinics on a definite plan, it is suggested that suitable buildings may be rented in appropriate localities and that 7 or 8 of the panel practitioners and a couple of service doctors may function there. Wherever possible, the service doctors may also be given lodgings in the same building.

It may also be necessary as a transitional measure to employ service doctors in some dispensaries to look after the 2,000 to 4,000 patients in view of the difficulties in getting all the panel doctors for the dispensaries.

Dispensaries and panel clinics :

It is stated under the E.S.I. regulations that dispensaries for insured persons should satisfy the following requirements :

A place for patients to wait under cover with a floor space of at least 8 sq. ft. for a person a maximum of one-fourth to one-third of sick persons attending daily are expected to be in the dispensaries at peak hours. A separate consulting room where the patients can be examined and seen in privacy; a properly equipped dispensing room; a store room; an office with accommodation for at least 1 clerk and storage for records; a properly equipped dressing room; a clinical side room; separate lavatories for male and female patients.

While the exact requirements for a dispensary, which may have 2,000 employees for attention, have thus been laid down with meticulous care, it is regrettable to note that so far as panel practice consulting rooms are concerned, no definite standards have been laid down. It is stated that there shall be reasonable accommodation where patients may wait under cover and separate accommodation where the patients can be seen and examined in privacy.

It seems very necessary that when a panel practitioner has a thousand employees allotted to him, the conditions under which the employees can be looked after must be more definitely stated. It can be said without exaggeration that 60% of the so-called panel dispensaries do not conform even to these general minimum directions. There is considerable pressure to include the families also. Apart from the fact that if the families are increased, the number of persons who can be attended to by a panel practitioner will have to be more definitely settled, it is obvious that unless polyclinics are opened, few of the general panel practitioners will be in a position to satisfy even the minimum requirements. Both in Bombay and in Calcutta, as has been already mentioned, many of the so-called consulting rooms of the panel practitioners are merely little cubicles which were probably utilised formerly for pawn-shops. When it is realised that the inclusion of families will mean that for each such insured person and family, the rate to be given to the panel practitioners will be Rs. 13/8 in most States and Rs. 15/8 in Calcutta and Bombay, the Allocation Committee, in fairness to the employees and their families, will have to review the whole position and lay down definite conditions under which the panel practitioners concerned may be taken on for the Scheme. In my opinion, the Allocation Committee has failed to recognise its responsibilities both in Bombay and in Calcutta in regard to dispensaries as well as in regard to some of the hospitals that have been recognised.

Terms of appointment of panel doctors:

It is suggested that the term of appointment of a panel doctor may be limited to 3 years and that he may be eligible for re-employment as a panel doctor if the Corporation is satisfied with his work. It may be said in this connection that in some States where there are honorary medical officers or honorary assistant medical officers who work in hospitals, their term is limited to a period of five years. They get no remuneration as the service is purely honorary and the renewal of their period of appointment is not automatic but is governed by considerations of the work done and their suitability.

In the selection of panel doctors, it is desirable that the experience gained by the panel doctors should be taken into consideration and, ordinarily, a person who has had at least a couple of years experience in a hospital after qualifying should be considered for the panel. It is very desirable that as far as possible persons possessing post-graduate qualifications should be given first priority in the selection of panel doctors. Highly qualified persons should be attracted for service under the Scheme either as service doctors or as panel practitioners with suitable terms. A higher capitation fee may be paid to them provided other facilities are available. This becomes all the more important when the families of the employees are also included and the type of practitioner who has had only out-patient practice without much of diagnostic resources should be discouraged to the extent possible.

Certain representations in regard to panel practice have been made by panel associations as well as by the Indian Medical Association branches on behalf of the medical personnel connected with the E.S.I. Scheme. Such representations will undoubtedly receive due consideration at the hands of the authorities but it was also pointed out to the associations that it was desirable that the responsibilities in regard to panel practice should be made clear to the doctors concerned.

One of the complaints that were made was that while the employee was registered and contribution was received from him, he was not allotted to a panel doctor for a long time, in fact till he actually fell sick for the first time. It would appear that as soon as an employee gets under the Scheme, he should be given the choice of the panel doctor where there is one or he should be allotted to a service doctor so that at any time when he falls sick, he may go to the doctor concerned. One of the conditions that must be laid down is that an employee who has been allotted by choice or otherwise to any doctor, service or panel, should not change over to another doctor within one year of his being so allotted. In exceptional cases and for change of residence, the employee may be permitted by the administrative medical officer to change over to another doctor.

It was represented by the panel doctors that owing to non-registration of some of the insured, the normal capitation fee was not made available. It seems reasonable that when the employee is insured, he should either by choice or by lot be allotted to a panel doctor near his place of residence or near his place of work. If within a period of 3 months, the employee does not choose his panel doctor, then the Corporation may allot him to a particular panel doctor with whom he will be registered for a period of one year and later he may be given a choice as already stated.

Hospitalization :

Serious complaints were made about lack of hospital facilities to the insured and it must be confessed that this is a legitimate grievance of the employees. In the natural desire to extend the Scheme as rapidly as possible, it was probably not found easy to consider the scheme of hospitalization in all its aspects and to provide for good hospital facilities. The hospital facilities now provided under the Scheme are :

(1) Private hospitals where a number of beds were taken over for the insured employees ;

(2) Nursing homes where a number of beds have been taken over for a similar purpose ;

(3) State hospitals where a number of beds have been reserved ;

(4) Blocks constructed in State hospitals for the accommodation of insured persons ;

(5) Hospitals constructed for insured persons only.

Hospital provision is required—

(a) for general and surgical diseases ;

(b) for maternity cases ;

(c) for certain special diseases—

- (i) tuberculosis ;
- (ii) cancer ;
- (iii) mental diseases ;
- (iv) contagious or infectious diseases.

It is no doubt true that the Corporation had envisaged a planned method of constructing hospitals for the insured persons but this required a great deal of co-operation between the States and the Corporation. I cannot say that that co-operation was available to the extent to which it ought to have been available in all States and it is for this reason that a certain amount of delay has occurred which has led to deleterious results. The delay has led to difficulties in securing suitable sites for the construction of the hospitals. It has also led to the utilization of ill-equipped private hospitals and nursing homes for hospitalization which undoubtedly will not be conducive to the rapid recovery of the employees nor to their satisfaction. In many places, employees' associations have asked for separate hospital facilities for the insured and I feel there is much to be said in favour of this.

Whatever may be the treatment that may be afforded particularly by reserving beds in certain State hospitals, it is the feeling of the employees at several places that they are not treated very differently from those who get hospitalization without contributing anything towards such facilities. Even in cases where it has been suggested that the treatment is different, the psychological factor which an employee has got that he and his employer have paid for what he is entitled to is hard to be satisfied. At present, the hospital facilities that are available are hardly sufficient to meet the needs of the insured people. It is unnecessary to state that if the families are also included, the hospital facilities will be deplorably inadequate.

The Corporation has decided to provide hospitalization on the following basis :

General (Medical and Surgical)	1 bed for every 800 employees.
Tuberculosis	1 bed for every 1,000 employees.
Maternity benefit	1 bed for every 500 insured women.

It has also been suggested that where the number of hospital beds required is likely to be 100, the intention is to set up independent hospitals and where the number is less, an annexe would be constructed or adequate number of beds reserved in the existing hospitals.

My visit to hospitals, particularly in Bombay, has not enabled me to appreciate the facilities in several of the private hospitals or nursing homes. I visited a hospital in Bombay where there were over a hundred insured persons and it is not surprising that the amount of over-crowding, insanitation and the mixing up of tuberculosis patients with other patients gave a dismal picture of the facilities for hospitalization. It may be stated in this connection that for every bed reserved and occupied by an insured person, payment of Rs. 7-8-0 per day is made to the establishment to cover treatment, surgical care where necessary, and diet together with the diagnostic facilities that are expected to be available in a hospital. It need not be added that there were no X-Ray facilities in the institution I have referred to. It was reported later, on my second visit, that the particular hospital could not take more than 40 and the strength was reduced.

It would have been unnecessary to have utilised such places as hospitals if the Corporation had launched on the scheme of building hospitals at a much earlier stage. In fact, this should have been one of the highest priorities in the implementation of the Scheme. I would therefore strongly recommend what has been insistently demanded by all employees' associations as well as by individual employees that the first priority should be given to the construction of hospitals.

It has been stated—

(1) that hospitals can be constructed by the States, a loan being given by the Corporation;

(2) that the hospitals can be constructed by the Corporation and utilised for this purpose with the help of the State Governments;

(3) that the hospitals may be jointly sponsored by the State and the Corporation.

I would in this connection plead that the constitution of an Employees' State Insurance Corporation and the funds made available to the States does not in any way absolve the States from their direct responsibility for the care of all the citizens. And the employees in any factory are as much entitled to be attended to by the State as any other persons. In fact, it may perhaps be stated that the State has a greater responsibility if it takes note of the fact that the industries give a great relief to the State concerned in the problem of unemployment and indirectly and directly help to get more finances for the State. If this basic principle is well realised, I am sure that there will be no difficulty in the States coming forward voluntarily as some of them have done to co-operate wholeheartedly with the Corporation in the starting of these hospitals.

It may be stated that the construction of hospitals will take some time. The first thing to do would be to select suitable sites for these hospitals and not to wait till plans and various details are made available [illegible] the construction of hospitals is decided upon. In my expe[illegible], in the towns where the majority of the employees had to be cared for, the question of suitable site is becoming an increasing problem and will ultimately cost more and more for the Corporation. In choosing a site, I would respectfully suggest that the area of the land must be sufficient to allow of expansion of hospital facilities. I believe that the scheme of employees' insurance is the beginning of a comprehensive National Health Service which will be a direct responsibility of the States and the Centre and, for this purpose, every State should have, whenever industrial establishments are working or are likely to function with a large number of employees, sufficient ground reserved for the construction of hospitals of this nature.

I was glad to note that in some States, notably in Andhra Pradesh, Madras and Mysore, steps were being taken in this direction. In Madura, a site has been chosen not far from the municipal limits where it is proposed to construct an Employees' State Insurance Hospital and it is suggested that 15 acres may be secured. I have ventured to make the suggestion that it must be at least 23 acres for the reasons I have given. Likewise in Coimbatore, which is a very important textile centre, immediate steps should be taken for acquiring the necessary site. In big cities like Bombay, Calcutta and Madras, on the basis of calculation per bed, it would be necessary to have 3 or 4 or even more number of sites chosen where hospitals with a bed strength of 150, 200 or 300 may be constructed for the employees. I am making this suggestion because the demand for the inclusion of families of the insured is very persistent and, in fact, the labour union representative in Calcutta went so far as to say that there should be no increase in the number of insured employees till facilities were made available for the families of those already insured. There can be no doubt that if more number of employees suffer from certain of the diseases, it is not infrequently due to spread in the family and the surroundings and if an employee is sick it will have a deleterious influence on the family also, predisposing the family to sickness; and no employee can recover rapidly if he is worried about the state of health of the members of his family. While it is obvious that the inclusion of the employees' families is very necessary, it has to be recognised that any sudden change-over without making adequate provision of dispensaries and hospitals would bring the whole scheme into discredit in a very short time.

I have suggested that in Calcutta and Howrah, the problems being what they are, they can only be tackled by the construction of polyclinic dispensaries mentioned above in a row, from one end to the other, perhaps 20 on each side for out-patient treatment and by the construction of at least 4 or 5 hospitals for the employees there. One great advantage in constructing such hospitals will be that all facilities for expert advice and treatment will be available and if the hospitals are planned in such a way that they are manned by full-time medical officers, their services could be made available for specialist treatment and advice.

So far as the building programme is concerned, there must be a separate agency under the joint auspices of the State concerned and the Corporation and it must not be the responsibility of the existing machinery which has enough to do to see to the proper working of the Scheme. Much of the delay in the construction of hospitals has been due to the fact that this important matter is not dealt with at the highest level and therefore a good deal of correspondence takes place with unnecessary delay and waste of time. It is suggested that, at the highest level, both at the State Government and the Corporation, inspection of sites must take place. Decisions must be taken immediately and a planned method of construction should be evolved within a period of six months for all the States. And this planned method of construction both in regard to acquisition of sites as well as priority in the construction of hospitals should be followed without any variation.

So far as the specifications for the construction of hospitals are concerned, except for the broad principles that the Corporation may lay down, the actual implementation must be left to the State authorities and to the respective Chief Engineers or their accredited representatives who are experts. There have been instances brought to my notice where for small minor changes, a good deal of delay has been caused and construction has been either postponed or put off.

It is necessary to bear in mind that when the families are included, as they must ultimately be, provision for maternity beds will be increasingly necessary and in all hospital construction, this fact must be taken into consideration. For general and maternity cases, it is better to have separate hospitals for the exclusive use of the workers under the Scheme in big cities.

As far as the other categories of diseases are concerned, my own view is that for tuberculosis, blocks must be constructed in well organized tuberculosis hospitals or sanatoria, because of the many other conveniences that are available there for the proper treatment of the cases as also because of the longer duration of hospital stay for these patients. An excellent block of this nature was visited by me at the Tuberculosis Hospital in New Delhi. Likewise, it may be made available in different places.

I do not think the patients will be benefitted by small wards being constructed in the General Hospital for tuberculosis patients nor by small tuberculosis Hospitals being constructed, because the longer duration of the illness, the specialist care that will be necessary and the special methods of surgical or medical treatment will be better organized in regular tuberculosis hospitals. A patient with a definite diagnosis of tuberculosis will require months of stay to recoup completely and therefore a little distance from the place of residence will not be a great difficulty as in the case of acute illness or illness of a short duration.

Likewise for cases of malignant diseases and mental ill-health, it may be desirable to have temporary accommodation in the general hospitals for such cases pending their shifting to the special hospitals or sanatoria.

In view of the rapidity with which hospitals have to be constructed, it is felt that the cottage type of hospitals may be constructed wherever possible. Such hospitals can stand for 25 to 30 years and, taking into consideration the many changes that are likely to take place in methods of hospital construction, one need not wait for massive structures to be constructed as hospitals. Cottage hospitals may be constructed a little away from the residences of the employees provided proper ambulance facilities and motor transport are available.

Even within this short period of 5 years since the Employees State Insurance Act has come into operation, vested interests are arising and it was a surprise to the Commissioner to note during the course of his visits to certain temporarily selected hospitals or nursing homes that claims were being pressed that they should be continued under the Employees' State Insurance Scheme to cater to the employees. The sooner all private hospitals are removed from the purview of the hospitalization facilities of the Corporation, the better it will be. In any case, it is recommended that the Corporation should give notice that within a period of 3 years, it may be found necessary to discontinue their services."

Housing of employees:

One of the most important and urgent problems is the proper housing of the employees in the various industries. All the beneficent measures for proper medical attention will be a failure if the housing scheme is not taken up immediately. Much of the problems of slum areas in big cities like Bombay, Calcutta, Kanpur, Ahmedabad and Madras are undoubtedly due to the lack of proper conditions being laid down with regard to housing facilities. Two important decisions should be made: (1) A proper scheme of housing should be evolved for all employees at present engaged in industries according to the conditions laid down by the Central Government where 50 per cent of the cost of the housing schemes is given by the Government. (2) In the case of all new industries, it should be a condition laid down that housing facilities should be made available as soon as possible and, in any case, the land required for the industries to be started. Unless this is done, the problem will be always there and the cost will multiply tenfold. A third important decision would be in the light of what has been stated above that no industry should be established in a city which is already overcrowded and which has not got sufficient facilities for housing the employees in the different existing industries. It is regrettable that in places like Bombay, Calcutta and Kanpur, new industries are started within the municipal limits of these cities. Either the State Government or the Central Government should enact a law to prevent further industrialisation within the limits of these cities.

It is important to note that in the housing schemes there should be a provision for the construction of dispensaries in regard to these people and where necessary for the construction of a hospital also if the total number of employees goes to some thousands. The housing scheme should therefore take note of such other incidental factors as amenities for the children, play-grounds, construction of bazaars, etc. In fact, the scheme should be on the model of a proper town planning scheme.

The sites that are now selected or are likely to be selected for industries and for housing of employees should be reviewed in the light of the above observations. It is understood that in respect of housing schemes for industrial workers, the Government of India have come forward to give loans as well as subsidies, the subsidy being 25% of the cost of the particular scheme. Under such circumstances, it seems very necessary that the housing schemes should be pushed through as rapidly as possible and, as has been stated, for all new industrial ventures, permission should not be given unless a satisfactory method of provision of housing for labour is also forthcoming.

In fact, I would suggest that a special committee be constituted with representatives of the Corporation, the State Government and the Public Works Department, to survey the whole position in the States and to formulate proposals within a period of 6 months.

Extension of the Scheme:

The extension of the Employees State Insurance Scheme has been pressed for the following categories:

(1) Extension to non-implemented areas where contributions are being paid by employees.

(2) Extension to families of employees. The necessity is obvious but unless proper conditions, as already underlined, are taken on hand for the implementation of this Scheme, the criticism and the complaint will increase manifold. In a consideration of this subject, a high degree of planning is required which should be done without any pressure being brought to bear by any of the interests concerned.

(3) While the extension of the Scheme in large industrial areas with a huge number of employees may be more easy under the

present conditions laid down, it has to be emphasised that if the Act is extended to sparsely populated industrial areas, far-flung, without easy means of communication, a separate set-up and regulations must be framed for such areas; and the usual urban methods of dealing with heavily populated industrial areas will not be applicable. The number of doctors, the patients allotted to each doctor, the necessity for transport, the necessity for ambulance service, the necessity of suitable methods of giving the sickness benefit as well as making available diagnostic facilities, specialist consultations and hospitalization: all these require further consideration. This aspect must be clearly taken note of by the Corporation and a high level committee should be appointed so that, with the extension of the Scheme to these sparsely populated areas, it would not be stated that the Scheme is a failure or that it is working inefficiently.

Contributions:

The contributions are calculated every week and are payable in respect of each week on the last day of the week. No contribution is payable by an employee whose average daily wage is below 1 rupee. But the contributions of those who are paid a higher daily wage are calculated for each employee on the basis of the actual payment that he receives. The calculations that have to be made for each employee naturally result in a good deal of clerical labour being expanded and sometimes delay. To save both these factors, it is suggested that a slab system may be adopted whereby the employees may be grouped under grades in relation to their income, as between Rs. 31 and 35, 36-40, 41-45, etc., up to Rs. 400. This gradation will result in an average actuarial assessment for the grade being automatically applied without meticulous details which are tedious, delaying and unnecessary. So far as the Corporation is concerned, it will not materially diminish the contributions and, as for employees themselves, it is not likely that it will adversely affect the contributions made by them to any appreciable extent. There will be no great difference from the point of view of the employers also, as the total average wage bill is what is taken into consideration in calculating the amount that the employers have to pay. This procedure, it is suggested, may be explored both to economise the cost of the administrative machinery as well as to give a clear picture to the employee of what is expected of him, since variations from week to week are not generally understood by several of the employees.

Payment of cash benefit:

It has been suggested that the mode of calculation of the employees' contribution may be on a slab basis. It is recommended that the mode of payment of the cash benefit may also be on the same basis so that the grade of wage of the employee will determine the scale of payment. This wage grouping for purposes of contribution as well as payment will largely conduce to—

(1) early payment,

(2) calculations without much difficulty,

(3) reduction of clerical staff necessary, and

(4) a better appreciation of what is due and what should be paid by the insured employees.

Benefits :

Reference has already been made to the medical benefit that the insured employees are entitled to and suggestions have been made as to how best to give medical treatment for and attendance on insured persons.

The other benefits under the Scheme are sickness benefit, maternity benefit, disablement benefit and dependants' benefit. So far as disablement benefit and dependants' benefit are concerned, there appears to be no difficulty in the mode of payment in vogue.

It is understood that at present, for patients suffering from tuberculosis, leprosy, mental and malignant diseases, the cash benefits are calculated at the sickness benefit rate for 56 days for which the employee is entitled and, after 56 days, the benefit given is calculated at half the sickness benefit rate which is approximately one-fourth of his wage. It would appear that in these unfortunate cases, there is greater need for monetary help and it is therefore recommended that for the extended period of one year, the benefit should be the same as sickness benefit rate, that is, half the wage.

Among the diseases enumerated above, for which extended benefit is given, it is recommended that fractures of the lower extremity, particularly the femar, which require a longer stay in hospital and convalescence, whether due to employment injury or not, may be given similar consideration.

Maternity benefit is given for all confinements after the 26th week of pregnancy, whether the child is born alive or otherwise, that is after the period of viability of the child in the womb. Representations have been made that for abortions, an extension of the benefit may be given. This is covered by the usual sickness benefit which period can extend up to 56 days. In the absence of hospital facilities for such cases, it will be difficult to assess with any degree of accuracy or certainty the occurrence of an abortion. Under such circumstances, it is recommended that the present rules may apply.

Mode of payment of benefits:

Representations have been made about delays in regard to sickness benefit and other benefits payable to insured employees. The discrepancies noted were:

(a) irregular submission of medical certificates,

(b) non-receipt of contribution cards from the employers,

(c) failure of insured persons to come for payment,

(d) defective claims,

(e) non-availability of certain documents.

It was also represented that the employees had to attend the local offices which were not conveniently situated. As these offices are few in number particularly in large cities like Bombay, Calcutta, Madras and Coimbatore where a large number of insured persons have to claim such benefits, it is observed that during peak hours due to lack of accommodation, the offices are overcrowded and the insured persons have to wait for a considerable amount of time before getting the cash benefits. In view of this, it is suggested that there should be at least one local office or sub-local office for payment of cash benefits for every 5,000 insured employees. It is also for consideration whether some of these cash offices may not be located in the premises of the bigger factories or mills, particularly those which employ 2,000 or more employees so that the time that the employee has to spend for going to the cash offices and the labour involved may be minimised.

Inspecting some of these local offices, it was found that they were working under extremely difficult conditions in small rented buildings with no sort of accommodation for the employees to rest while waiting for their sickness benefit payments. A large number of employees crowded at such centres for a fairly long period, resulting in a great amount of frustration and dissatisfaction in respect of the benefits given to them. As is the case with hospitals and dispensaries, early steps should be taken to see that proper offices are constructed with necessary accommodation at convenient centres for the bulk of the employees claiming the benefits.

It has been suggested that in the identity card that is issued to the employees, it would be desirable if a copy of passport size photograph of the employee can also be included. These identity cards should be issued in the shape of small card-board bound folders.

A representation that was made by employees associations in different places was that if an employee does not avail himself of any of the benefits of the E.S.I. Scheme for a full period of one year, he should be entitled for some bonus for that period. The analogy was based upon certain insurance schemes like motor insurance where if no claim is made for a particular year, a *pro rata* reduction in the next year's premium is allowed. It was on the other hand contended that this being an insurance scheme based upon the concept of 'social security', for which everybody contributed and those who were in need received the benefits, no consideration should be given in cases where there were no claims. Much might be said for and against the position taken up. On the other hand, the employers stand to gain by encouraging cent per cent attendance of some of the employees, as it will not disrupt the work of the factory if a large number of employees continue to be regular in their attendance. It may be that, under such circumstances, the employers may consider the possibility of recognising the good work done by such employees.

It was represented that there was no uniform practice in all the factories regarding the amount of casual leave or earned leave that an employee may take during a year. If this practice is made uniform, the necessity for employees to go in for medical leave for short periods may be lessened and the criticism of lax certification by some doctors will materially be minimised.

Emoluments of medical officers:

The medical officers should be paid adequately and, seeing that for a panel practitioner with out-patient practice who has a thousand insured persons to attend to, an expenditure of Rs. 6,000 to Rs. 6,500 per annum will have to be incurred, it is suggested that for persons who are drafted to hospitals and polyclinics a suitable emolument should be fixed, which in the case of a specialist will be Rs. 1,000 to Rs. 2,000 per mensem. In the case of service doctors, a special allowance should be available for the duties required of them. It may be that these may vary from State to State slightly but, on the whole, if medical practitioners are to be attracted either to the hospitals or to the dispensaries, whether as panel or service doctors, adequate remuneration must be guaranteed.

The extra allowance for the E.S.I. doctors must be paid wholly by the Corporation and it is suggested that, if service doctors are utilised, they may be employed for periods of 3 years at a time so that they may be rotated from the regular service list. This practice is obtaining in some States and it should be possible in other States as well. It is very necessary in such cases that their emoluments should be suitably regulated and there should be a prescribed period of service under the State Insurance Scheme.

Whether they are service doctors or panel doctors, it is necessary to emphasize the fact that domiciliary visits will be expected of them. When the families are also included, obviously a lesser number of the employees is expected to be allotted to a doctor.

It has been stated by the Corporation that the remuneration to be given will be increased to the extent of Rs. 13.50 per annum for an insured employee and his family in all the States except in Bombay and Calcutta where the amount will be Rs. 15.50. On this basis, 600 to 750 employees will, it is expected, be allotted to a panel practitioner. The necessity for giving him facilities in the type of dispensary that has been suggested will be more obvious.

Medicines :

Representations were made that there was some difficulty in practitioners prescribing costly medicines and the number of such medicines might suitably be increased. While appreciating this fact that a relaxation may be made under certain conditions, it is suggested that if these drugs are kept in the polyclinics under the charge of the service medical officers concerned, it will not be difficult to make them available when necessary. At the same time, it does not seem essential to include a large number of various preparations which have more or less the same effect in the treatment of certain diseases. Nor is it possible to lay down any general directions in the matter. Panel practitioners, service doctors and specialists can undoubtedly, within particular limits, prescribe categories of drugs without in any way affecting or delaying the recovery of the patient concerned.

Reference was made to the fact that much avoidable wastage occurred in prescribing certain medicines. It must be clearly stated that the employees are entitled to the best methods of treatment available. At the same time, a reasonable amount of care should be taken by the practitioners to see that consistently with the early recovery of the patient, drugs are not wasted by being given in large quantities or indented for in large quantities. The suggestion that all such drugs should be stored at the polyclinics and given to the patients concerned on the prescription of the panel practitioners would possibly be one way of seeing that both efficiency and economy are practised in dealing with the prescriptions of the panel practitioners.

From what the Commission had seen in some places of the juxtaposition of chemists' shops and the panel practitioners' consulting rooms, it did not seem that this was an arrangement conducive to strict standards of panel practice. There is room to suggest that the sooner the Corporation has its own depots and sub-depots of medical stores pending the construction of polyclinics, the better it would be from the point of view of both efficiency and utility.

It was represented that while all other States are following an agreed plan in regard to the list of drugs which should be prescribed as special and costly drugs, in the State of Bombay, the State has drawn up its own list which is to be followed by the insured medical practitioners. It would seem desirable that, in such respects, there should be a uniform practice followed in all States, as it will give room for complaints that an invidious distinction is made between employees of one State and those of another. The best thing would be for the Medical Benefit Council, after ascertaining the views of the States, to come to an agreed conclusion on this subject.

Representations were made that the medical inspectors were not sufficient in number to regulate the conditions under which the employees were receiving medical benefit. It seems desirable in view of the laxity in certain areas that the number of medical inspectors should be increased so that a fair amount of uniformity may be ensured for the treatment of the employees. In Calcutta, Lt. General Chakravarti said that there were about 700 medical practitioners in Calcutta and Howrah and that the administrative medical officer had only one inspector under him to look after 700 medical practitioners and to supervise 200 chemists' shops. It is obvious that it is impossible to have effective supervision with the assistance of only one inspector. The difficulty will be removed if the polyclinic scheme is adopted and the service doctors would be in a position to take responsibility for the medicines. In these big cities, the areas must be sub-divided and put in charge of separate medical inspectors so that each medical inspector has not got more than about 150 clinics in association with the Allocation Committee and this will also ensure supervision in regard to payment of sickness benefit without delay.

Ambulance:

It is obvious that ambulance facilities are not available to the extent they ought to be. It has been pointed out at one of the discussions that under the Factories Act, the employer is to have an ambulance room with the necessary outfit ready. But where transportation is necessary, it has not been laid down in the Act that the employer should furnish the transport. Moreover, under existing conditions, it will be very desirable that ambulance service should be maintained by the Corporation at certain centres and the employer in places where telephone communication is available should have an ambulance room with telephone facility to get the ambulance immediately. In a city like Calcutta, there is urgent need for 20 to 30 ambulance cars of this nature. The number of cars will depend on the distance at which different industrial units are located, the total number of employees engaged in the industry and the facilities available nearby in the shape of hospitals and specialist treatment. In all large factories which employ 1,000 and more persons, there is need for an ambulance car being always at the disposal of the factory, taking into consideration the fact that most of the factories now work round the clock with night shifts. This provision will be apart from the ambulance that may be placed at the disposal of the employees by the Corporation.

Audit :

At present, it is understood that a test audit is conducted under the direction of the Accountant-General by his staff in the State concerned. In view of the very large amount of expenditure involved, it seems very necessary that there should be a separate internal audit under the Administrative Medical Officer for the medical side of the activities of the Corporation and a separate audit for the sickness benefit etc. With the increase in the amount of expenditure to be incurred in future, internal concurrent audit is essential for the safe working of the Scheme.

Administrative set-up :

The organizational set-up consists of the Corporation, the Standing Committee of the Corporation, the Medical Benefit Council, and the Regional Boards with local committees for particular areas. The Corporation at the centre has as its chairman the Minister in charge of Labour of the Central Government and as Vice-Chairman, the Minister of Health at the Centre. Under the Act, the State Government has the responsibility for—

(1) the establishment of hospitals, dispensaries and other institutions and the allotment of insured persons or their families to such dispensaries or other institutions.

(2) the scale of the medical benefit which shall be provided at any hospital, dispensary, clinic or other institution.

(3) the nature and extent of the staff, equipment and medicines that shall be provided at such hospitals, dispensaries or institutions.

(4) the conditions of service of the staff employed at such hospitals etc.

The Corporation, on the other hand, is empowered to make regulations not inconsistent with the Act and the rules made thereunder for the administration of the affairs of the Corporation. In view of the States' responsibility, it seems the time is come when, with the experience gained, more powers should be delegated to the State Regional Board and in a number of cases, decisions can be taken by the State Regional Board which has the Minister of Labour as its Chairman. The devolution of responsibility in this direction will go a long way to stimulate more active progress in the work of the Corporation in the different States.

Review of the working of the Scheme:

This Scheme has been in existence only for the last 5 or 6 years. It is very necessary that a careful review of the working of the Scheme must be done periodically by a special committee unconnected with the actual working of the Corporation. Such a review should be done at intervals of 2 years. It is understood that at present there is a General Purposes Sub-Committee which reports on the working of the Scheme in different States. This General Purposes Sub-Committee is constituted by the Standing Committee of the Employees State Insurance Corporation to visit various places in the country and to study the working of the medical and cash benefits under the Scheme. It is very necessary that in such a Committee the State representative on the Corporation should be included as a member for the State concerned.

Conclusion:

The Employees State Insurance Act, conceived as it has been for the welfare of the employees and incidentally to improve their work in the factories, is a step in the right direction. It is in the working of the Act and the spirit in which the several measures conceived thereunder are implemented that the success of the Act will ultimately depend. In the light of the experience gained during the past few years since the Act was brought into force, it seems necessary that some urgent steps should be taken and, for this purpose, a greater amount of co-operation and co-ordination is necessary.

The Corporation, being a centralised body, will not be in a position to look after the Scheme in the various States effectively unless a certain amount of decentralization of functions and responsibilities is introduced. At present, it has been brought to the notice of the Commission that even in regard to some small details, reference has to be made to the Head Office of the Corporation and it has been represented that this inevitably results in delay. While the broad principles governing the administration of the Act must be those which are arrived at in consultation with the States by the Corporation, in the actual implementation, the States must share a greater amount of responsibility and must take a greater amount of interest. It is impossible for this Act to be administered unless the States' responsibility is realised and full co-operation is obtained from the States.

As in the Centre, so in the States there is great need for not merely co-operation but an intensive linking-up of the efforts between the Ministry of Labour and the Ministry of Health of the State concerned. The efficiency of medical treatment can be ensured only if that close linking-up were maintained. The Regional Boards no doubt have the head of the Department of the Medical Services of the State as a member but it would be desirable to have the Minister of Health and the Secretary to the Department also actively taking interest in the working of the Employees State Insurance Scheme.

The States have no doubt realised that in the Employees State Insurance Scheme, they are in a position to get the help of the Corporation for the medical treatment of a large number of employees who are undoubtedly citizens of the respective State entitled for such benefit as ordinary citizens. The relief given to the State therefore through the Corporation must be utilised to the full benefit of the employees.

Emphasis has been laid on the urgent necessity for the construction of hospitals in various places and for these hospitals to be manned entirely by the Employees State Insurance medical staff, except that in the case of some highly specialised methods of treatment, the services of the specialists in the State may be invoked under definite conditions. It has been suggested that the hospitals need not be centralised in any one locality but depending upon the city or town concerned, there can be more than one hospital as for instance in Calcutta and Bombay where the employees can find it possible to obtain hospitalization. The urgency for hospital construction is ever greater when it is realised that there is a great deal of pressure to include families in the scheme of medical benefit. The hospitals therefore should have facilities for treatment of medical, surgical, obstetric and gynaecological cases together with all the diagnostic facilities necessary and provision for certain specialities to be treated, if possible, in the hospital itself.

A statement showing the number of beds available at present for the insured persons is appended (Annexure III). A list giving the number of persons insured in the different States is also attached (Annexure IV). On the scale of beds for different categories authorised by the Corporations (mentioned elsewhere in the report), the overall number of beds works out to 2.5 beds per 1000 employees. It is understood that inpatient treatment under the Scheme at present is authorised only for insured persons and the families of insured persons are entitled to receive restricted medical care, *i.e.*, out-patient treatment and domiciliary confinement. When the Scheme is extended to all areas with insurable population of 1,000 and above, it is expected that about 24 lakhs of employees will be covered under the Scheme. The number of beds required in the various States for in-patient treatment of insured persons only is estimated to be about 6340 (*vide* Annexure V). With the inclusion of families of insured employees, it will be obvious that the position is indeed very unsatisfactory and requires immediate consideration.

It has been suggested that many of the so-called panel dispensaries are situated under such adverse circumstances that they cannot be called dispensaries, that very few facilities are available even for ordinary methods of examination and that, if unfortunately the same dispensaries were to be utilised for families, the conditions would be deplorable. It is therefore very necessary to build what has been called polyclinics where 7 or 8 panel doctors may attend to the employees entrusted to their care and where a couple of service doctors will be in charge and can be assigned some employees for medical care and where technicians will also be available for some of the laboratory tests. Where families are to be included, one of these doctors must be a lady doctor and it is suggested that at least two service doctors permanently attached to these polyclinics must have quarters so that they may be available for emergency cases.

It is not proposed to enter into a discussion as to the relative merits of the panel system and the service system but it has to be pointed out that the panel system requires great improvement and that the panel doctors, while being given all facilities to utilise their knowledge, should see to it that their terms of appointment are strictly complied with. Laxity and irregularity in attending the panel clinics and the poor set-up of the clinic itself cannot be overlooked under any circumstances. To the extent to which panel practice has to be continued, it has been suggested that a panel practitioner should be appointed for a maximum period of 3 years and, subject to satisfactory work, the practitioner may be continued for further similar periods. In some States where honorary medical officers are employed in the hospitals, definite hours of work have been in vogue while they are paid no honorarium or compensation and such honorary medical officers and assistant medical officers are appointed for a period of 5 years and are eligible for re-employment if found satisfactory. If polyclinics and dispensaries of this nature are constructed and utilised, there will ultimately be a great deal of saving, as there would be no necessity for separate diagnostic centres nor for recognising certain drug stores as places where the medicines should be obtained. The polyclinic itself can store all available medicines which are to be given and dispense them to the sick employees so that they need not go to drug shops or in the majority of cases to diagnostic centres. It would also be conducive for specialists to visit these dispensaries at particular hours to see to any specialist advice needed.

There has been a steady increase in the number of persons included under the Employees State Insurance Scheme. Therefore it has been suggested that immediate steps should be taken in all cities where large industries are being established to acquire land in excess of the immediate requirements so that ultimately the hospitals or dispensaries may be suitably remodelled to accommodate the increased number of persons.

In regard to construction of hospitals and dispensaries, while a sketch plan may be prepared at the Centre, it should be left to the States concerned within the limits prescribed about the total area, etc., to construct such buildings as are best suited to the locality concerned. It will not be suggested by any one that a type-design which will be suited to some of the Southern States in India will be as well suited to Assam, Punjab or some of the northernmost States.

Whether these hospitals and dispensaries should be constructed on a loan basis or out of contributions by the Corporation is a matter to be settled with each State; but it is important to lay down that such hospitals and dispensaries should be utilised only for those who come under the E.S.I. Scheme.

It was noted that in the most crowded locality of Delhi, the ground-floor of a particular building which was dark and dingy was being utilised as a dispensary, two large rooms thereof being considered for housing in-patients. The whole set-up of the dispensary gave a rather dismal picture of what the employees had to go through and when it was stated that this small part of a storied building was rented for Rs. 2,000 per mensem, one could not help feeling that with the amount expended during the last three or four years, it would not have been difficult to have built an insurance hospital or more than one polyclinic for the permanent use of the Corporation. I strongly advise that wherever rented buildings have been used, every effort should be taken to construct immediately new hospitals and polyclinics.

It is necessary for a small committee to visit all the important centres immediately and, within 3 months, draw up in association with the States a scheme of hospital construction and polyclinic construction and high priority should be given to these buildings so that within a period of 2 years, the Corporation would have extended its hospital facilities and provided for much better out-patient treatment in the polyclinics suggested.

A recommendation has been made that so far as the sickness benefit is concerned, it may be extended for certain special diseases. It has also been suggested that the local and sub-local offices for giving sickness benefit must be increased in number so that a large number of employees may not have to congregate and wait for a long time to get this benefit. Wherever possible, such offices may be located either in large industrial units or very close to such industries so that the bulk of the employees may not have to spend much time in going to these offices.

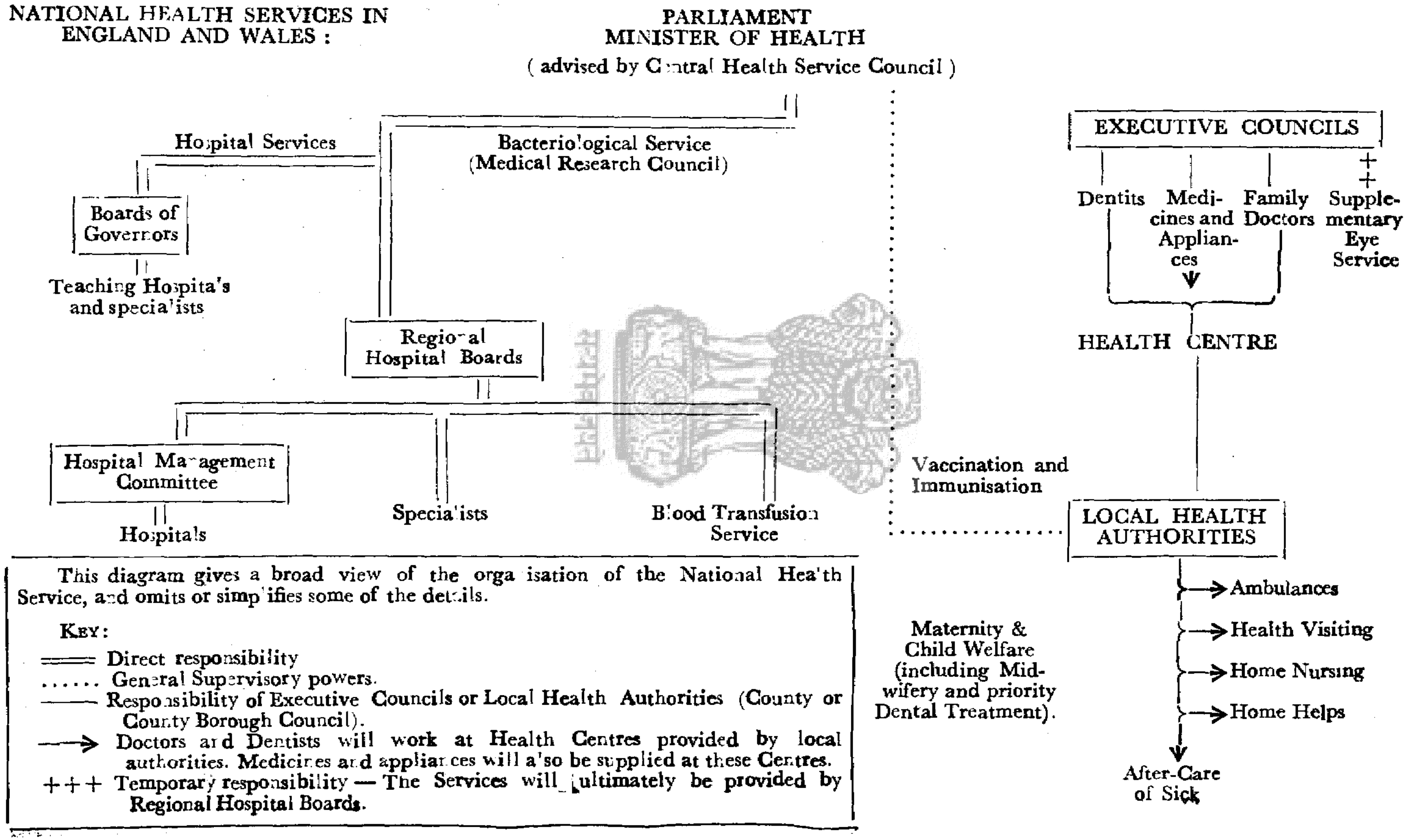
Domiciliary visits are expected to be paid but in actual practice, it is not surprising that the difficulties for domiciliary visits under conditions in which the employees are housed in the various localities make it almost impossible. Moreover, it has to be emphasised that it is not the curative part of sickness that is most important but the preventive aspects for the preservation of health and this can only be ensured if proper public health facilities are available and the doctors responsible can look after the public health aspects of the insured persons including their families.

One of the urgent necessities to be taken up is the proper housing of all employees and till this is ensured, full benefit of the scheme will not be possible.

It has been stated that the employers' contribution in the implemented areas is on a different rate from that in the non-implemented areas. There has been a good deal of criticism about the delay in implementing the Scheme in non-implemented areas. It would therefore appear that one of the urgent steps should be to extend the Scheme in non-implemented areas where employers are making their contribution. It may be mentioned in this connection that in Calcutta (as stated in another part of the report) strong objection was raised by the employees trade union representatives to the extension of the Scheme before all the families of the employees already insured had been included. In the conditions under which Calcutta is now functioning with its complex health problems, it is difficult not to appreciate the vehemence of the stand taken."

Appendix B-13

NATIONAL HEALTH SERVICES IN ENGLAND AND WALES :



This diagram gives a broad view of the organisation of the National Health Service, and omits or simplifies some of the details.

KEY:

═══ Direct responsibility

...... General Supervisory powers.

——— Responsibility of Executive Councils or Local Health Authorities (County or County Borough Council).

——→ Doctors and Dentists will work at Health Centres provided by local authorities. Medicines and appliances will also be supplied at these Centres.

+++ Temporary responsibility — The Services will ultimately be provided by Regional Hospital Boards.

Appendix B-13

NATIONAL HEALTH SERVICES IN U.K.

A Short Survey of Health Services

(Available before the Introduction of the National Health Service)

The National Health Service, which started on 5th July, 1948, is an agreed Service from the point of view of politics. All three of the major political Parties have accepted it and played their part in its planning, and it is therefore wrong to refer to it as "Socialised Medicine" as though it were a feature of one Party only. All three Parties are committed to it, and it is not expected that a change of government would make any serious difference to the scheme as a whole, although details might be altered.

In order to understand the National Health Service and to realise why it has taken the shape it has, it is necessary to know something of how the different health services in this country developed.

THE HOSPITALS BEFORE 1948

Prior to 1948 there were two distinct types of hospitals in England and Wales which had evolved from quite different roots—the Voluntary Hospitals and the Municipal Hospitals.

1. **The Voluntary Hospitals:**

Many of these hospitals date back to institutions found in the Middle Ages by the Monastic Orders. The great period of the foundation of the voluntary hospitals was in the eighteenth and nineteenth centuries and most of the big London hospitals and a number of hospitals in the provinces were founded between 1720 and 1870.

The voluntary hospitals were ordinarily charitable institutions for the sick poor. They were founded and endowed by local citizens and their medical staffs were men who gave their services free to care for their less fortunate fellow-men who were sick. As the medical staffs received no money for their work in the hospitals they had to be sure of a sufficiently large private practice in the neighbourhood in order to earn enough money to live. As time went on, a system grew up whereby people paid the hospital what they could afford for their medical care but they did not pay the specialists nor did the specialists receive any of the money paid to the hospitals by the patients, and so the unpaid medical staffs still had to continue to work in localities where there were sufficient well-to-do people able to pay as private patients.

It was becoming very obvious even before the last war that hospitals would have to start paying their medical staff because, with the general levelling of incomes, the profession could not afford to give such a large amount of time for nothing, and private patients were becoming fewer.

2. The Municipal Hospitals:

The Municipal hospitals grew up equally haphazardly from quite a different root—*i.e.*, the Poor Law hospitals which derive from the old system of poor law relief first established in the time of Queen Elizabeth I, largely as a result of the dissolution of the monasteries and the loss of their organisations. These Poor Law institutions and workhouses grew up during the next three and a half centuries. They cared for those who were without money or without means; and the wards which were developed for the care of the destitute sick were frequently rather deplorable places.

Until 1938 the Ministry of Health had only been concerned with the municipal hospitals, but suddenly it found itself having to provide, for the first time, a comprehensive hospital service. The Emergency Hospital Service which thus came into being was extemporised on top of the existing organisation which was left in the hands of the people running it at the time.

In 1943 a complete and detailed survey of all the hospitals in the United Kingdom and their work was undertaken by teams of experts, some appointed by the Ministry and other sponsored by the Nuffield Foundation. The result was a number of important reports giving information on what existed, and much of the country's subsequent hospital planning has been based on these reports.

GENERAL PRACTITIONER SERVICES BEFORE 1948

Since the beginning of the twentieth century personal health services—that is, the services concerned with the welfare of the individual rather than with environmental conditions—have been built up progressively and with increasing momentum. The greatest of all these services was undoubtedly the National Health Insurance Scheme which, since 1912, provided a general practitioner service for all workers earning less than £250 per annum (later raised to £420) and, as additional benefits, dental, opthalmic and other forms of treatment. Under this scheme wage-earners and their employers paid a contribution, with the result that if the employees were sick or unemployed they got benefit and were also entitled to the services of a general practitioner and free medicines from the chemist. But there was no entitlement to hospital services and there was no provision at all for dependents—wives and children and old people were not insured. Therefore only about one-half of the population was insured under the National Health Insurance Scheme and the other half was dependent for their medical care either on paying fees as private patients to a general practitioner, or on a certain number of voluntary sick clubs (a form of voluntary insurance whereby people paid the doctor a few pence a week).

When the National Health Insurance Scheme started, it was decided that the contributions which were fixed should be paid to a number of insurance organisations known as "Approved Societies", and should not be collected nationally. Some of these Approved Societies were Co-operative undertakings, some were run by the Trade Unions, and some by private insurance companies. Hence the anomaly arose that here was a national compulsory insurance scheme being administered through separate private insurance companies, and a serious result of this was that the benefits were apt to vary; the actual sickness benefit and the right to a general practitioner service were the same but the wealthier Societies also helped with dental care, spectacles, etc., while the poorer ones gave the minimum.

The general practitioners who took part (and not all the medical profession gave services under the scheme) were paid on a capitation system. This was a new system started in 1912 for the National Health Insurance Scheme and has been continued under the National Health Service. The capitation fee system means that a doctor accepts medical responsibility for a certain number of people who put their names on his list. The person can choose his doctor and the doctor can accept or refuse the patient. Once a doctor has accepted medical responsibility for a patient, he receives an annual fee in respect of that patient, irrespective of how much or how little the patient sees him. The idea is that the balance is struck between those who do not use him and those who use him a lot.

Apart from the National Health Insurance doctors and private doctors, there were also Public Assistance doctors who provided the general practitioner service for the destitute to enable them to get some sort of medical help, but it was not always of a very high standard.

Thus before 1948 the pattern of general practice was of an uneven system, good in some ways, bad in others, and much in need of re-planning.

In November, 1942, Sir William Beveridge (now Lord Beveridge) reported on the social and allied services and pointed out that his proposals must rest, *inter alia*, on the assumption that a comprehensive Health Service would be provided which would "ensure that for every citizen there is available whatever medical treatment he requires in whatever form he requires it, domiciliary or institutional, general, specialist or consultant, and will ensure also the provision of dental, opthalmic and surgical appliances, nursing and midwifery, and rehabilitation after accidents".

The Government welcomed this proposal for a comprehensive Health Service and the Minister of Health and Secretary of State for Scotland were charged with the duty of initiating consultations with representatives of the interests most concerned, namely, the medical profession, the voluntary hospitals and the major local authorities. These discussions were begun early in 1943 and on 18th February, 1944, a White Paper on "The National Health Service" (Cmd. 6502) was published which has as its stated object "to show what is meant by a comprehensive service and how it fits with what has been done in the past, or is being done in the present, and so to help people to look at the matter for themselves".

NATIONAL HEALTH SERVICE

Explanatory Note:

The National Health Service started on 5th July, 1948. The *National Health Service Act,* 1946, which received Royal Assent on 6th November, 1946, makes it the duty of the Minister of Health "to promote the establishment in England and Wales of a comprehensive Health Service designed to secure improvement in the physical and mental health of the people of England and Wales and the prevention, diagnosis and treatment of illness". (There is a separate Act for Scotland and also one for Northern Ireland, but the Health Services in these countries are run on very similar lines to the one in England and Wales.)

The Minister of Health is responsible to Parliament for seeing that Health Services of all kinds of the highest possible quality are available to all who need them. He is advised by the Central Health Services Council (and certain Standing Advisory Committee dealing with special subjects, which he appoints after consultation with the various interested bodies).

The *National Health Service (Amendment) Act,* 1949, received Royal Assent on 16th December, 1949. This Act mainly provides for amendments in detail rather than in principle. There are, however, two amendments in principle : the Act empowers the Minister, if he so desires, to **introduce a charge for prescriptions**—a power which was invoked in 1952—and also empowers the Minister, if he so desires, to prescribe charges to be paid for the use of the Service by persons ordinarily resident abroad.

The National Health Service—which is available to every man, woman and child in the country—is a charge on the National Income in the same way as the Armed Forces and other necessities. Everyone resident in this country is entitled to use any complete part or all of the Services and no Insurance qualification is necessary. Under the old Health Insurance Scheme, which came to an end on 4th July, 1948, only those who paid weekly contributions were entitled to use it and payment had to be made for many months or years before one could claim many of the benefits and there were some things which were not available at all, but which are now available under the National Health Service, (for example, hearing-aids).

Under the *National Health Service Act,* 1946 the only charges falling on a patient for any of the Services were in certain cases for the renewal or repair of glasses or for the replacement of dentures; for domestic help, for bedding or nursing requisities, etc., required at home; and for accommodation and treatment in private wards in hospitals. It was open to anyone, if they wished, in certain cases to pay the extra cost, if not clinically necessary, of more expensive glasses, more expensive dental treatment and more expensive artificial limbs. It was also possible if a person wished for privacy in hospital, and it was not considered medically necessary, for him to have an amenity bed, in which case he paid a fixed charge for this but nothing for the cost of treatment or maintenance.

Certain changes after the introduction of the Service in 1948

Owing to a worsening of the economic situation in 1949-50, certain changes were introduced in 1951 to meet part of the cost of dentures and glasses and later the making of charges for medicines and certain appliances to out-patients in hospitals and for dental treatment (excluding examinations). It is stated that all the charges meet less than one-fifth of the total cost of the Service and that it therefore "remains" a predominently 'free' service available to all.

Details of the main branches in which the Service is broadly divided are as follows :—

Hospitals and Specialist Services:

On 5th July, 1948, ownership of 2,688 out of 3,040 voluntary and municipal hospitals, (including mental hospitals, mental deficiency institutions, convalescent homes and certain types of clinics) in England and Wales was vested in the Minister of Health. About 250 hospitals remain outside the National Health Service, most of these being hospitals run by Religious Orders.

The hospital service, of which the specialist and consultant facilities form part, includes general and special hospitals; maternity accommodation; tuberculosis sanatoria; infectious diseases hospitals; provision for chronically sick, mental hospitals and mental deficiency hospitals, accommodation for convalescent hospital treatment and medical rehabilitation, and all forms of specialist treatment—for example, plastic surgery, radiotherapy, orthopaedic and ear, nose and throat treatment, together with the provision of most surgical and medical appliances.

In the main, this part of the Service is organised on behalf of the Minister of Health in regions by 14 (15 after 1st April 1959) Regional Hospital Boards. Each hospital region is associated with a University having a teaching hospital or medical school. The Board members who serve in their own time and without payment, have a variety of experience gained with all kinds of organisations and official bodies. Day-to-day administration of the hospitals is carried out on behalf of the Boards by Hospital Management Committees. There are 383 of these and they are usually responsible for a group of related hospitals. Their members also serve voluntarily. This means that there is great scope, as in the past for local responsibility and local interest. The only hospitals in the Service outside the Regional Boards' immediate responsibility are the teaching hospitals which have the responsibility for providing facilities for undergraduate and post-graduate medical or dental education and which are administered by Boards of Governors. There are 26 Boards of Governors in London and 10 in the provinces.

Nearly all specialists and consultants take part in the Service. They hold hospitals appointments and can take up whole-time or part-time service. Those who have part-time appointments can still accept fee-paying patients outside the Service.

Certain hospitals have accommodation in small wards or single rooms which, if not required for patients who need privacy for medical reasons, may be made available to patients who desire it as an amenity. Amenity bed charges are fixed under Regulations at 6/0d. to 12/0d. per day. In such a case, the patient pays nothing for the cost of treatment or the cost of maintenance.

In some hospitals a number of pay-beds has been placed at the disposal of part-time specialists taking part in the Service for use by private patients who agree to pay full hospital maintenance costs and (usually) private fees to the specialist as well. The fees that may be charged by specialists to patients occupying private pay-beds are normally restricted to 75 guineas to cover everything. For exceptionally long or complicated treatment, this limit may be raised to 125 guineas, and special arrangements may be made in a limited portion of pay-beds for patient and doctor to agree to fees outside these limits.

Arrangements to obtain the service or advice of a hospital specialist are made by the patient's family doctor as in the past. A specialist usually sees a patient at the hospital or clinic at which he works, but arrangements will be made for the specialist to visit a patient at home if he is unable, for medical reasons, to be taken to hospital.

No charges are made to National Health Service in-patients, (except for amenity beds, see above), but there is a charge of 1/Od. to out-patients for each item on a prescription form for drugs and medicines, (unless administered at the hospital), with certain exceptions.

At the end of 1957 there were 80 hospitals providing distribution centres where hearing-aids can be supplied free after a recommendation by a specialist.

General Medical and Dental Services, Pharmaceutical Services and Supplementary Ophthalmalic Services

Family Doctor Service:

The Family Doctor Service is organised in accordance with Regulations by 138 Executive Councils whose members serve in a voluntary capacity. These Councils also organise the Dental, Pharmaceutical and Supplementary Ophthalmic Services for their areas. Executive Councils have been set up to cover every County Council and County Borough area, but in some instances, for more efficient administration, one Council covers two areas. Twelve members of each Executive Council are appointed by local doctors, dentists and pharmacists, eight by the local health authority and five by the Minister. The Council elects its own Chairman from among its members.

All doctors are entitled to take part in the Family Doctor Service, and most general practitioners (about 22,000) have decided to do so. Taking part does not prevent them from also having private fee-paying patients. The Health Service doctor is paid on a capitation basis—*i.e.*, a fee in respect of each patient whom he accepts on his list.

Everyone aged 16 and over can choose his doctor (parents or guardians choose for children under 16) and the doctor is also free to accept a person or not as he chooses. A person may change his doctor if he wishes, either at once if has changed his address or obtained permission of the doctor on whose list he is, or by informing the local Executive Council (in which case a delay of about 14 days is usual). When people are away from home they can still use the Family Doctor Service if they ask to be treated as "temporary residents", and, in an emergency, if a person's own doctor is not available, any doctor in the Service will give treatment and advice whether the person seeking it is on his list or not.

All doctors who joined the Service by 5th July, 1948, were free to continue practising where they were. Since 5th July, any doctor wishing to take up a National Health Service practice must first get the consent of the Medical Practices Committee, consisting of a Chairman (who is a medical practitioner) and eight other members, six of whom are medical practitioners—at least five still in actual practice. The Committee is only able to refuse an application if the number of doctors in the Family Doctor Service in the area is already considered to be sufficient or the number of applicants exceeds the number of vacancies.

Patients are treated either in the doctor's surgery or, when necessary, at home.

Doctors may prescribe for their patients all drugs and medicines which are medically necessary for their treatment and also a certain number of surgical appliances, (the more elaborate being provided through the hospitals).

Pharmaceutical Services :

There are about 13,250 pharmacies, 160 drug stores and 2,400 appliance suppliers taking part in the Pharmaceutical Services in England and Wales. Approximately 207,000,000 prescriptions were dispensed in 1957. After dispensing, the chemist sends the prescription forms to one of the Pricing Offices under the control of a central Joint Committee. Payment is made by the Executive Council.

There is a charge of 1/Od. for each item (other than elastic hosiery) ordered on a prescription form made out by the family doctor and presented for dispensing. The charge for elastic hosiery is 5/Od. or 10/Od. for each article. The charges are paid to the pharmacist or other supplier except that in the country areas, where the doctor does his own dispensing, the 1/Od. charges are paid to the doctor. Repayment of the charges can be made in certain cases.

Dental Services :

Dentists are free to take part in the Service if they wish. They may practise in any area they choose and may have private patients as well as patients under the Service. The great majority of dentists available for general practice takes part in the Service. Dentists are responsible to the Executive Council in whose areas they provide services. Patients do not have to register with any particular dentist, but are free to go to any dentist who is taking part in the Service and is willing to accept them. Instead of a capitation fee, the dentist receives payment for items of treatment for individual patients.

There is no need for the patient to obtain a recommendation before seeking dental treatment. The dentist is able to carry out at once all normal conservative treatment (*e.g.*, fillings), emergency treatment and ordinary denture repairs. He needs to get prior approval before undertaking treatment which involves the removal of teeth necessitating replacement by dentures; provision of dentures; orthodontic treatment; extensive and prolonged treatment of the gums; gold fillings, inlays, crowns and special appliances and oral surgery. Prior approval of this kind is given by the Dental Estimates Board consisting of a Dental Chairman and Vice-Chairman, five other dental members and two lay members. The Board also authorises claims for payment submitted by dentists, actual payments being made by the Executive Councils.

No charge is made for the clinical examination of a patient's mouth, but there is a charge of £1 for treatment, or the full cost of any treatment if less than £1. For dentures a patient has to pay something under half the full cost, but where a denture supplied under the Service has to be replaced because of loss or damage, the whole or part of the cost may be charged to the patient if he is found not to have taken reasonable care. Charges for dental treatment (other than the supply or relining of dentures or additions to them) are not made in the case of anyone under 21 years of age, or expectant mothers, or mothers who have had a child during the preceding 12 months.

Supplementary Ophthalmic Services:

In addition to the Eye Services available at clinics as part of the Hospital and Specialist Services, there are Supplementary Ophthalmic Services organised by the Executive Councils.

On the advice of the family doctor in the first instance, sight can be tested by ophthalmic medical practitioners or ophthalmic opticians and spectacles supplied if necessary. Nearly all ophthalmic opticians and dispensing opticians take part in the Service (more than 7,000) and most of the ophthalmic medical practitioners (about 900). Cases requiring specialist treatment are referred to the Hospital Eye Service.

When spectacles are supplied there is a charge of 10/0d. for each lens, with a further charge where a patient asks to be supplied with plastic or safety lenses. A patient also pays the full cost of the frame chosen from the wide variety available under the National Health Service. Children's glasses in a frame of one of the standard types are free of charge. Patients may have lenses supplied under the Supplementary Ophthalmic Services fitted in private frames if these are suitable. A patient who cannot afford to pay the charges can apply to the National Assistance Board for help in the ordinary way.

Local Health Authority Services:

The Local Health Services, a series of services mainly concerned with the care of patients in their own homes, are the responsibility of the major local authorities, County Councils and County Borough Councils. These are known as Local Health Authorities (there are 146 of them in England and Wales) and they work through Health Committees. The duty has been placed on them of providing such services as midwifery; ante-natal, post-natal and infant welfare clinics, and dental services where practicable for expectant and nursing mothers and young children; health visiting; home nursing, ambulances; provision of domestic help on health grounds; special care and after-care of the sick; local mental health services; and also vaccination and immunisation. The setting up of Health Centres is also a duty of Local Health Authorities, but at present it is felt that the extensive provision of Centres should wait on the experience to be gained from the use of a limited number of experimental Centres and developments in group practice.

All these services are free of charge except for domestic help and, in certain cases, provision of residential accommodation, meals, nursing requisites, bedding etc., for which a charge may be made according to means. Since June, 1952, Local Health Authorities have also had power to make charges for the use of day nurseries. The Local Health Authority may only charge what is reasonable, having regard to the means of the users.

How the Doctor is Paid (Great Britain):

All doctors taking part in the Service are paid a capitation fee which at present is fixed at 18s. 0d. per patient on list per annum. (The maximum number of patients which a general practitioner may accept under the Service is 3,500 for a single-handed practitioner; 4,500 for a member of a partnership provided the average for the partnership is not above 3,500; and, in addition, 2,000 in respect of the employment of a permanent assistant.)

The following table shows the gross remuneration from capitation fees and "loadings" *only—i.e.,* what the doctors earn basically before adding to their income in any of the ways listed below :—

Size of List	Remuneration based on a capitation fee of 18s. 0d. *plus* loadings of 12s 0d. per head for patients between 501—1,500
	£
500	450
750	825
1,000	1,200
1,250	1,575
1,500	1,950
2,000	2,400
2,500	2,850
3,000	3,300
3,500	3,750

Remuneration to doctors :

In addition doctors may derive further income from the National Health Service in a number of ways. For instance, doctors setting up single-handed practice in certain areas designated as "under-doctored" areas get an initial practice allowance of £780 in the first year, £585 in the second year and £260 in the third year. In certain rural areas doctors receive substantial mileage payments for the long distances they have to travel for treating patients.

"Inducement" payments, varying from £250 to £500 per annum are made to doctors who are willing to practise in sparsely populated or otherwise unattractive areas.

Special payments are provided to doctors for emergency treatment of patients and for the treatment of temporary residents (a person staying up to three months).

A grant of £150 per annum is made for supervision over a trainee assistant plus his salary and boarding expenses, with certain limitations regarding the total amount, and, in addition, an allowance not exceeding £200 if another car is also necessary.

A maternity fee of five guineas is paid to a doctor for each maternity case if he has no "recognised obstetric experience" and a fee of seven guineas if he has "recognised obstetric experience".

There are other ways also in which a doctor in the National Health Service may derive income, such as for the supply of drugs under certain conditions.

In addition there is a superannuation scheme, which benefits also assistants in the employment of doctors under the National Health Service; he contributes 6 p.c. of his net annual receipts from the General & Pharmaceutical Services and the Government pays a contribution of 8 p.c.

No attempt is made here to give a complete ennumeration of the sources of income for doctors employed in the National Health Service; enough has been said, it is hoped, to show that various methods have been devised to make the service attractive to medical men.

The choice of doctors, dentists, pharmacists and others under the Service is left free to each person, the choice being made, in each case, from a panel for every one of these types of personnel provided under the scheme.

Arrangements for temporary residents:

Anyone who is living temporarily—*i.e.*, for not more than three months—in any district and who is not on a doctor's list in that district, or anyone moving from place to place, such as a commercial traveller or theatrical artist, can apply to any local doctor in the Service for treatment as a temporary resident. People recuperating in convalescent homes are also classed as temporary residents.

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Children at boarding schools can be placed as permanent residents in the school doctor's list if he is in the Service and they can then be treated as temporary residents when at home for the holidays. Similarly undergraduates and other students can register with a doctor in the Service in the university town and be treated as temporary residents when they are at home.

During temporary absence abroad no benefit from the National Health Service can be derived except in Sweden, where, by special arrangement, British travellers can take advantage of the Swedish Health Service. Similar arrangements exist in respect of the Channel Islands, Guernsey, Alderney and Jersey. Visitors from overseas who fall sick after their arrival may be treated as temporary residents and may get the benefit of the National Health Service.

Treatment of eye conditions:

Under the National Health Service a full service for the care of the eyes has been available since 5th July, 1948. Without prejudice to the development of this service, a Supplementary Ophthalmic

Service for the testing of sight and the supply of glasses *only* has been set up. Specialist treatment of eye conditions is provided by the hospital service, and arrangements for the provision of certain special kinds of lenses (*e.g.*, contact lenses) and for the supply of artificial eyes are also made under this service.

Services for mothers and Children:

Under the National Health Service 146 major Local Health Authorities—County Councils and County Borough Councils (urban authorities)—are responsible for a number of important services to mothers and children.

Services for the care of mothers and young children are :—

(a) Provision of ante-natal clinics for the care of expectant mothers.

(b) Provision of post-natal clinics for the care of mothers and babies.

(c) Provision of infant welfare clinics for the care of children under five.

(d) Provision, where practicable, of dental care for expectant and nursing mothers and young children. Progress in the development of this service is being hampered by the shortage of dentists.

(e) Supply of welfare foods.

(f) Special arrangements for the care of premature infants at home.

Other services which may be provided under this head are :—

(i) Day nurseries.

(ii) Special arrangements for the care of the unmarried mother and her child.

MATERNITY SERVICES PROVIDED UNDER THE NATIONAL HEALTH SERVICE

Facilities available:

The services for expectant mothers which are provided under the National Health Service fall into three groups :—

(i) The clinic, domiciliary midwifery, and domestic help services provided by Local Health Authorities (County and Borough Councils) ;

(ii) The maternity medical services provided by general practitioners ; and

(iii) Hospital accommodation for institutional confinements and the provision of specialist services where necessary, for which the Hospital Boards are responsible.

Expenditure incurred by Local Executive Councils and Regional Hospital Boards under (ii) and (iii) is borne by the State ; expenditure by Local Health Authorities under (i) is borne partly by local rates and partly by Exchequer grant.

Local Health Authorities

Clinical Services :

Local Health Authorities have a duty to provide ante-natal and post-natal clinics for the regular supervision and care of expectant and nursing mothers. Routine medical examinations and special investigations are undertaken at the clinics. Where practicable, priority dental care is also provided. Welfare foods and simple medicaments are normally supplied, and detailed advice on mothercraft given. The clinics are, in fact, centres for all the educational and social work that is so desirable for pregnant and nursing women. The Authorities midwives and health visitors normally work from the maternity and child welfare centres where the clinic sessions are held.

Domiciliary Midwifery :

The Authorities also have the duty to secure that an adequate number of midwives is available in their area to attend mothers confined at home. If the mother chooses to have only a midwife to attend her, and does not avail herself of the general practitioner maternity service, the confinement is conducted by the midwife herself, who will call in medical aid if required, in accordance with the rules of the Central Midwives Board. The cost of the medical aid in these circumstances is met by the Local Health Authority.

Domestic Help :

The Authorities have the power, not duty, to provide domestic help in households where it is required. The presence of an expectant or lying-in mother is specially mentioned as an occasion for help ; and if, therefore, the mother is in need of domestic help during and after her confinement, the Local Health Authority will often be able to assist her. The midwife or health visitor will advise her about this.

A charge is made for this service, but it may be scaled down or removed where it would cause hardship.

Maternity Medical Services:

An expectant mother may, if she wishes, make arrangements for a doctor to provide her with maternity medical services. These services include :—

(a) Ante-natal care throughout pregnancy (including an initial ante-natal examination and one at the 36th week of pregnancy).

(b) Attendance at any emergency in connection with the pregnancy if the doctor is summoned on the patient's behalf.

(c) Attendance at the confinement if the doctor thinks it is necessary or is called in by the midwife.

(d) Medical supervision of the mother and child during the puerperium.

(e) Post-natal care of the mother, including pelvic examination at or about the 6th week after confinement.

The family doctor may provide maternity medical services for a patient who is on his medical list, and he is paid a special fee for these services. There are, however, certain doctors whose obstetric experience has been approved by a local professional committee. The names of these doctors are shown separately or are specially mentioned in the Executive Council's list. These doctors are entitled to a higher fee; if in an emergency they are called in by midwives to patients for whom they have not previously arranged to provide maternity medical services, they are entitled to a fee from the Local Health Authority. If the family doctor does not wish to undertake the maternity care of one of his ordinary patients, he will advise her to consult one of his colleagues on the obstetric list. The doctor who agrees to provide the services gives the mother a form to sign, and she returns part of it as an acknowledgement.

The mother receives the services free of charge, and the doctor is paid a comprehensive fee for his services.

Maternity Beds, and Specialist Services:

The hospital authorities provide maternity beds in maternity and general hospitals. Where there are not enough beds for all applicants, priority is given to patients requiring a bed on medical or obstetric grounds, or because conditions at home are not suitable for the confinement to take place there.

If a family doctor in charge of a maternity case needs specialist advice, he can refer his patient at any time to the hospital, where she can be seen by a specialist as an out-patient, or, if necessary, be admitted to hospital as an in-patient. If it is necessary on medical grounds for the patient or her baby to have specialist examination at home, or in a private nursing home, her doctor can arrange through the hospital service for a visit by an obstetrician or paediatrician.

All these services are provided free unless the patient wishes otherwise. At some hospitals patients may have additional privacy on paying a charge of 6s. 0d. to 12s. 0d. a day (for a bed in a small ward or for a single room), and still have their medical treatment free. A patient who needs privacy on medical grounds will not have to pay these charges.

Mental Health Services:

Mental and physical health were brought together for the first time in one comprehensive service under the National Health Service Act, 1946. On 5th July, 1948, the Minister of Health, as Central Authority for Mental Health under the Act, became responsible for providing :—

(a) All hospital accommodation and services therein, including nursing, for mentally ill or mentally defective persons (subject to payment only if received as private patients).

(b) Services of specialists for mentally ill or mentally defective people (also without payment except for private patients).

A Mental Health Advisory Committee was set up to advise the Minister and the Central Health Services Council (which deals with all questions of health and four of whose forty-one members are mental health experts) on all questions dealing with mental health. The responsibilities of local authorities in the mental field were also reorganised and expanded.

Hospital Services:

Of the 2,644 hospitals in the National Health Service, there are 191 hospitals (excluding Broadmoor, but including 30 hospitals where observation treatment only is carried out) of various kinds devoted wholly to or having accommodation set aside for the treatment of patients under the Lunacy and Mental Treatment Acts, and 147 hospitals (excluding Rampton and Moss Side) vested in the Minister for the treatment of mental defectives. The number of patients in these hospitals at the end of 1957 was 144,176 (including 956 patients under observation) and 53,200 (excluding 3,769 on licence) respectively. Patients who are treated under the Lunacy and Mental Treatment Acts must receive their treatment in accommodation designated, licensed or approved for the purpose, but there are many psychiatric patients whose illness can be suitably treated in other than designated hospitals, and who are willing to enter such other hospitals for this purpose of their own free will, in the same way as patients enter general hospitals for the treatment of physical illness. Accommodation is found for such patients in neurosis hospitals and long-stay annexes for elderly persons suffering from mental infirmity. About 44 per cent. of the staffed beds in all National Health Service Hospitals are allocated to mental or mental deficiency patients.

Local Health Authority Services:

As a result of the National Health Service Act, 1946, the functions of local authorities previously exercised by separate committees under the Lunacy and Mental Treatment Acts and Mental Deficiency Acts were brought together into a single service administered on behalf of each Local Health Authority by a Health Committee (in many areas by a special Mental Health Sub-Committee of the Health Committee). In addition, Local Health Authorities were empowered by this Act to make arrangements for the prevention of mental as well as physical illness and the care and after-care of those suffering from mental illness or mental defectiveness as well as physical illness.

Under the Lunacy and Mental Treatment Acts, Local Health Authorities have appointed duly authorised officers who are responsible for taking steps to secure the admission of patients suffering from mental illness to hospitals. If there are no relatives or friends able to take steps themselves, and if a duly authorised officer has reason to believe that a person is of unsound mind and is not under proper care and control, he has a duty to inform a Justice with a view to making a summary reception order. He also has power to remove such a person in cases of emergency to hospital where he may be detained for a brief period pending examination by a Justice

Local Health Authorities also employ mental health workers to visit persons who are showing signs of mental illness, or those who, after coming out of hospital, need help in re-establishing themselves in the community. Such officers work closely in touch with the patient's family doctor, other social workers and with the hospital service.

Local Health Authorities are also responsible for ascertaining persons who are mentally defective and for providing supervision or guardianship for them, when such is required. At the end of 1957 there were 80,791 such persons in England and Wales. Local Health Authorities may also provide training and occupation to mental defectives in special centres, in their own homes or in small groups.

Comparison of the Position Before and After the Introduction of the National Health Service

Previous Position—For Insured Persons only	*Position for all since 5th July, 1948*
1. Only 20,000,000 persons in England and Wales—mainly wage earners—paid Insurance and thereby were entitled to get the services of a doctor without charge.	Over 44,000,000 people *i.e.*, every civilian man, woman and child in England and Wales may avail themselves of the services of a doctor.
2. Compulsory Insurance was paid by all manual workers and non-manual workers earning up to £420 per annum (in a few cases there were exceptions), but doctors' bills had to be paid for wives and children of insured persons (unless the wife were an insured person in her own right).	The National Health Service is comprehensive. Moreover, it provides *all* forms of medical advice and care—hospital and specialist as well as a family doctor—and it does not depend upon Insurance qualifications.
3. You were free to choose any doctor able to look after you as long as he took insured persons.	Freedom of choice remains for both patient and doctor.
4. You could change your doctor, but unless the first doctor consented, you could only change at the end of March, June, September or December, and then only if you had given at least one months' notice.	You may change your doctor whenever you wish by a simple procedure which takes a maximum period of fourteen days. If you have changed your address, or if you like to obtain your doctor's consent you can change immediately.
5. Treatment was personal and confidential.	It remains personal and confidential.
6. Dental Service was an 'additional benefit" provided by some but not all Societies, out of surplus funds. A qualifying period was often necessary. A few Societies paid the whole cost but the majority paid about one-half or two-thirds of the cost.	Everyone is entitled to dental treatment. Since May, 1951, however, a charge has been made for the supply of dentures (roughly half the cost up to a maximum of £4.5 for full upper and lower dentures); and while dental examination remains free, since 1st June, 1952, (except for those under 21 and expectant and nursing mothers), there has been a charge of £1. for a course of dental treatment (or the full cost if less than £1.)
7. The same applies broadly to ophthalmic benefit which was also an "additional benefit."	All Ophthalmic services are available to everyone. Sight-testing is free but since 21st May, 1951, when glasses are supplied, there has been a charge of £1. per pair, *plus* the actual cost of the frames. There is still an entirely free range of glasses for children under 16 and also for older children who are in full-time attendance at school.
8. In a very few cases hearing aids were provided by some Societies which gave "additional benefits" ; contributions towards the cost of such appliances were made according to the funds available.	Hearing aids are supplied without charge for those who, in the opinion of a specialist, whould benefit from them. Batteries and maintenance are also free.

Previous Position—For Insured Persons only	*Position for all since 5th July, 1948*
9. Fees were charged for ambulances by many Local Authorities. Societies sometimes paid travelling expenses incurred in obtaining treatment which were provided as an "additional benefit."	Local Health Authorities provide ambulance services without charge.
10. Medicines and some appliances necessary for treatment which were prescribed by panel doctors were issued free of charge to all *insured* persons.	All medicines and a range of appliances suitable for home treatment prescribed by a National Health Service doctor are supplied without any cost or limitation other than a 1s. charge in respect of each item on a prescription form presented for dispensing, and a charge of 5s. or 10s. when elastic hosiery is prescribed.
11. Payments towards the cost of hospital (in-paitent) treatment and convalescent home treatment were made by some Societies as an "additional benefit." The cost of specialist services received in hospital was sometimes paid for by the Society.	All hospital treatment (incldung surgical operations and the advice of consultants) as in-patients or out-patients is provided free of charge except for accommodation in private wards. Out-patients pay for prescriptions, dentures glasses and certain other appliances as mentioned in paragraphs 6, 7, 10 and 12.
12. Medical and surgical appliances were provided by some of the Societies which gave "additional benefits" ; contributions towards such appliances were made according to the funds available.	All appliances which are medically necessary are provided. Since 1st June 1952, there have been charges for elastic hosiery, surgical abdominal supports, surgical footwear and wigs.
13. Domestic help was provided in the home by some Local Authorities in cases of illness or maternity. A charge was made according to means.	These arrangements have been taken over and expanded, a charge continuing to be made according to means.
14. Health Visitors were primarily concerned with the care of mothers and young children.	Health Visitors' work has been extended to cover the health of the *entire* household including preservation of health precautionary methods and health education. The Health Visitors work in close cooperation with the family doctor.
15. Many mentally ill or mentally defective people were in institutions run by Local Authorities and had to pay charges according to their means or those of their responsible relatives.	All mental hospitals and institutions (except those run for private profit) have been taken over by the Regional Hospital Boards, and accommodation and treatment are free of charge.
16. Mental and physical health were sharply divided.	As the Service provides both for the mental and physical well-being of the community, much closer co-ordination is possible.

Certain other facts about the National Health Service

1. The financing of the Service :

Most of the cost of running the service is paid out of the National Exchequer in the same way as the Armed Forces and other necessities. A small amount towards the cost, about one-ninth of the total estimated cost for the service is from a small weekly contribution introduced by the National Health Service Contributions Act of 1957. Some of the expense is met by Local Health Authorities.

2. Treatment under the Service :

The obtaining of treatment under the Service is not dependent on the payment of contributions, any person resident in the country, including visitors from abroad, being eligible for the services under the scheme.

3. Voluntary help in the running of the Service :

Most of the administration of the National Health Service is done by unpaid voluntary workers, about 12,000 in England and Wales ; since the beginning there has been no falling off in such voluntary help ; the administrative cost of the scheme is 3 per cent. of the total expenditure.

4. Choice of doctor :

The patient is free to choose his doctor from the local panel subject to the limit the doctor is permitted to accept (3,500). The patient is also free to change his doctor. In rare cases the doctor may refuse to take a person on his list.

5. Availability of the services under the scheme :

A person is free to use all or any part of the services offered under the scheme ; *e.g.*, a person with a private doctor outside the National Health Service may be referred by his doctor for an operation to a hospital, where, if the patient so desires, he will be treated as a National Health Service patient, except to the extent that he is not entitled to medicines under the scheme. The prescription and supply of medicines is dependent on his being a patient of a doctor under the scheme.

6. Charges under the scheme :

Although charges for certain services under the scheme became operative after some time since its inception in 1948, the total recovery from patients is estimated to amount to only 5 per cent. of the total expenditure.

Moreover, people who are unable to meet the charges without hardship may apply to the National Assistance Board for re-imbursement of the payments that are made.

7. Drugs and medicines under the scheme :

A doctor is entitled to prescribe any drug or medicine he considers necessary for the treatment of his patient but he cannot order food or toilet preparations.

8. Expansion of services under the scheme:

Since the beginning of the scheme in 1948 the increase in the number of beds was 30,000 and in nursing and mid-wifery staff by about 30,000 full-time and 14,000 part-time.

9. Extension of preventive work through the scheme:

The main development in this connection has been an expansion of the functions of the Health Visitor. Previously she was concerned with the giving of health advice to mothers and children; under the scheme her services extend to all the members of the family and she is concerned with their health, including precautions against the spread of infection. She is also the link with any other service the family may need.

10. Coverage and success of the scheme:

(a) 97 p.c. of the population of England and Wales have chosen a doctor in the service.

(b) Nearly all doctors, dentists, opticians, pharmacists etc. have joined the scheme.

(c) The National Health Service provides for the community a comprehensive medical care programme with the minimum of payment by the individual, due provision having been made for monetary help to those who cannot pay those charges.

Certain figures relating to the National Health Service

1. No. of persons within the Service on 1st July, 1958	44,632,784
2. **Doctors as on 1st July, 1958**	
(a) No. of doctors providing general medical services	20,389
(b) No. of doctors approved for grants for training assistants . .	795
(c) No. of assistants in training under such grants	332
3. **Pharmaceutical service**	
No. of chemists (including drug stores and suppliers of appliances on 31st December, 1958	15,849 (practically) all
4. **Ophthalmic Service as on 31st December, 1958**	
(a) No. of ophthalmic medical practitioners	910
(b) No. of ophthalmic opticians	6,352
(c) No. of dispensing (only) opticians	797
5. **Dental Service**	
No. of dentists	10,200 (approximately)

6. **Hospital and Specialist Services**

(a) No. of hospitals in the Service on 30th September, 1958	2,641
(b) No. of hospital clinics in the service on 30th September, 1958	949
(c) (i) No. of beds (on 31st December, 1958) in all hospital under the service	505,523
(ii) Staffed	483,082
(iii) Unstaffed	22,441
(iv) Average daily number of occupied beds	417,575
(d) Included among the total number of beds under the Service, namely 505,523 are the following :	
No. of staffed beds for mental illness	156,329
No. of staffed beds for mental deficiency	57,670
No. of amenity beds	5,449
No. of pay-beds	5,743

7. **No. of Consultants** taking part in the Service (31st March, 1959), including honorary appointments . . . 7,034

8. **Nursing & midwifery staff** (31st March, 1959) including students, pupil midwives and mental nurses :

(a) Whole-time	157,235
(b) Part-time	41,382
TOTAL	198,617
(c) Student nurses (including mental nursing student)	54,304
(d) Pupil midwives	4,386
(e) *Nurses in mental & mental deficiency hospitals*	
Whole-time (including student)	31,142
Part-time	9,538
TOTAL	40,680

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9. **Maternity and child welfare (31st March, 1958)**

(a) No. of ante-natal clinics	1,999
Local Health Authority	1,969
Voluntary	30
(b) No. of post-natal clinics	41
Local Health Authority	41
Voluntary	Nil
(c) No. of child welfare centres	5,817
Local Health Authority	5,491
Voluntary	326
(d) No. of day nurseries	501
Local Health Authority	490
Voluntary	11
(e) No. of midwives employed by Local Health Authorities	6,781
No. of midwives employed by hospital authorities and voluntary bodies	715

(f) *No. of home nurses employed on home nursing*

Whole-time	4,994
Part-time	5,195
TOTAL	10,189

(g) *No. of health visitors tuberculosis visitors and other nurses*

Whole-time	1,728
Part-time	6,393
TOTAL	8,121

(h) *Domestic helps*

Whole-time	2,893
Part-time	42,096
TOTAL	44,989

10. Mental deficiency Services (31st December, 1958)

	Under 16	16 & over	Total
(a) *No. of mental defectives (voluntary and statutory) under supervision and guardianship*			
Supervision	18,222	60,820	79,042
Guardianship	152	1,459	1,611
(b) *No. of mental defectives receiving training*			
At Centres	9,804	6,009	15,813
At home	665	1,380	2,045
(c) No. of mental defectives suitable for and but not receiving training (at Centre or at home)	2,583	6,727	9,310
(d) *No. of mental defectives on local authority lists awaiting admission to hospitals*			
Urgent	1,740	1,131	2,871
Not urgent	1,087	1,795	2,882

11. Gross expenditure on the National Health Service

	In millions of pounds
1949-50—	
England & Wales	387.59
Scotland	48 45
TOTAL	436.04
1954-55—	
England & Wales	453 60
Scotland	57·65
TOTAL	511 25

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1958-59—	
England & Wales	619.47
Scotland	75.80
TOTAL	695.27
Estimated gross cost for 1959-60—	
England & Wales	617.89
Scotland	75.80
TOTAL	693.69

Appendix B-14

SUMMARY OF MORBIDITY STUDIES IN SOME COMMUNITY PROJECT AREAS AND AMONG THE CONTRIBUTORY HEALTH SERVICE SCHEME BENEFICIARIES IN DELHI

In the urban area of Delhi covered by the C.H.S. Scheme catering to a population of about 4.5 lacs, during 1959 there were 12,93,693 new cases reporting to the various dispensaries for treatment and 21,81,786 old cases. Men formed about 30% of all cases, women 27% and children 43%. The rates of attendance per beneficiary per annum were 2.8 for new cases and 6.1 for old cases. The number of cases hospitalised among them during 1959 was 13,300 comprising of 7,006 maternity cases, 380 tuberculosis and 5,917 others. So far as tuberculosis was concerned the average duration of stay in hospital was 209 days.

About 54,006 visits were made to the homes of patients having serious illness. The ratio of the number of domiciliary attendance to total number reporting at dispensaries worked out to 14 : 1000.

In 1959 the sickness attendance rate was 2837 per 1000 beneficiaries. Respiratory diseases formed 25% of total sickness; then came diseases of digestive system; next diseases of the skin and musculokeletal system. Accidents accounted for 9.93 per 1000, the rate of eye diseases was 128.67 anemias and avitaminoses 43.03 and other deficiency cases 115.05. Pregnancies recorded a rate of 347.60 and incidence of disease of genitourinary system was 50.42.

Lastly the percentage of attendance of Class I and II officers of Government was higher than Class III and IV.

Morbidity Survey in rural areas.

The morbidity survey in rural areas was carried out in Community Development Blocks consisting of 174 villages with a population of 85,928. The survey showed that 12.3% of the population investigated were not in good health. Of these 4.3% were actually ill, 7.3% were suffering from chronic illness and 1.7 per cent were in indifferent health. The sickness rate among males and females was 13.9 and 12.7 per cent, respectively. The most important cause of sickness was unspecified fever in about 7% of the population. Next in importance was diarrhoea and dysentery and other diseases of the digestive system—these accounted for 3%. The morbidity rate per 100,000 population was as follows :—

Smallpox	99
Snake bite	99
Tetanus	66
Throat diseaes	132
Tuberculosis	66
Typhoid and para	2119
Venereal Disease	99
Ill-defined causes	199
Unknown causes	166

29.2% of the population investigated in the community block were sick with one or more diseases during the year. The morbidity and mortality rates of a population sample of all ages are shown below :—

Age (yrs)	Morbidity			Mortality	
	Sample	No. suffered	Rate per mille	Number dead	Rate per mille
Under 1	122	52	262	11	90.0
1—5	376	104	276	1	2.7
5—15	746	179	240	2	2.7
15—55	1,568	448	286	4	2.6
Above 55	.04	109	534	2	0.8

Morbidity surveys help to indicate the standard by which the health of the people should be measured. In assessing the requirements of any scheme of public health certain fundamental facts relating to the health and welfare of the population should be taken into account. The loss of man-hours of the working population and secondly the loss of earning capacity of the individual and the family of the worker can be assessed only by morbidity surveys of a comprehensive nature. The morbidity rate will give information on the causes of morbidity (and consequently the search for remedies to the situation), the effect of morbidity on the productive capacity of the individual, the amount of expenditure incurred on the medical care of such people and lastly the relation between the morbidity rate and the expenditure on medical relief of this class of people.

We therefore recommend that there should be a permanent organisation in each State for the survey of morbidity in the areas concerned. Such an organisation will naturally act in cooperation with special surveys for other diseases and with the epidemiological units that have been suggested elsewhere.

Such morbidity organsations have been established in U.S.A., U.K. and other countries. It is recommended that the Central Government may take steps to study the manner in which morbidity survey organisations are working in such foreign countries and evolve a suitable scheme applicable to all States in India. A central unit under the Directorate General of Health Services may undertake this task of evolving a common scheme. This central unit may, besides laying down a common pattern for assessing morbidity rates evaluate the returns from different States. On the basis of such studies intensive surveys by specialised agencies may be planned where necessary. In Appendix B-41 will be found explanatory notes and the set up suggested for morbidity Survey Organisation at the Central and in the States.

Appendix B-15

SELECTED PROVISIONS UNDER THE WATER ACT, 1945 OF U.K.

Part I—Central and Local Planning

1. It shall be the duty of the Minister of Housing and Local Government (hereafter in this Act referred to as 'the Minister'), to promote the conservation and proper use of water resources and the provision of water supplies in England and Wales and to secure the effective execution by water undertakers, under his control and direction, of a national policy relating to water.

* * * *

2. (1) The Minister shall appoint a committee, to be called the Central Advisory Water Committee (a) for the purpose of—

(a) advising him or any other Minister concerned upon matter connected with the conservation and use of water resources;

(b) advising any Minister concerned with the administration of enactments which relate to or in any way affect the conservation or use of water resources or the provision of water supplies, upon any question that may be referred by him to the Committee in connection with the operation, or proposed amendment of, the said enactments;

(c) considering the operation of any such enactments (b), and making to the Minister concerned such representations with respect to matters of general concern arising in connection with the operation of those enactments, and such recommendations for their extension or modification, as the Committee think fit.

* * * *

3. (1) If, with respect to any area in England and Wales, the Minister is satisfied that the provision of water supplies for that area or the conservation of water resources for the purpose of such provision may be thereby more effectively secured, he may by order (a) constitute for that area a committee, to be known as a Joint Advisory Water Committee, which shall consist of—

(a) a chairman appointed by the Minister;

(b) members appointed by statutory water undertakers (b) whose limits of supply (b) are comprised wholly or partly in the area of the Committee or who supply water in bulk (b) for distribution in any part of that area;

(c) members appointed by local authorities (a) whose counties or districts are comprised wholly or partly in the area of the Committee, not being such statutory water undertakers (b) as aforesaid.

4. (1) An order made under the last foregoing section may prescribe the duties of Joint Advisory Water Committees and, without prejudice to the generality of the foregoing provision, those duties may include the duties of—

(a) carrying out a survey of the existing consumption of and demand for water supplies in their area and of the water resources in or available for their area;

(b) preparing an estimate of the future water supply requirements of their area;

(c) formulating proposals for meeting the existing or future water supply requirements of their area including proposals for the joint use by two or more water undertakers of any existing or proposed new source of water supply;

(d) advising statutory water undertakers (a) and local authorities (b) represented on the Committee in the preparation and co-ordination of schemes relating to water supply;

(e) furnishing the Minister and the said statutory water undertakers and local authorities with such information relating to water supplies in their area or water resources in or available for their area as they may reasonably be required to furnish.

* * * *

Part III—Conservation and Protection of Water Resources

14. (1) Where the Minister is satisfied that special measures for the conservation of water in any area are necessary in the public interest, whether for the protection of public water supplies or for the protection of water supplies used for industrial or other purposes, he may make an order defining the area in question, and thereupon the provisions of this section shall apply to that area (a).

Appendix B-16

THE PRINCIPAL POINTS MADE OUT BY DR. W. H. GRIFFITH IN HIS REPORT ON THE PLANS OF THE UNICEF'S EXPANDED NUTRITION PROGRAMME IN INDIA

"The initiation of a national food policy as a part of the agricultural policy was designed primarily to accelerate the production of India's principal food stuffs *viz.*, wheat, rice, jowar, etc. But this production alone cannot guarantee nutritional health unless their dietary value is fortified with more of protective foods. What is required is the production and consumption of more milk and dairy products, pulses, flour from oil seeds such as ground-nut and sesamum, leafy green and yellow vegetables, citrus and other fruits, eggs, poultry, fish and meat.

Nutrition education is required to use more of the protective foods. The consumer in India, as elsewhere, must have a strong incentive if he is to accept changes in his accustomed diet.

The time is particularly opportune for the formulation and implementation of a national nutrition policy in India.

The UNICEF/F.A.O. programmes are only beginning to make their contribution in the field of nutrition in India. A large number of mothers and children in India have yet to be reached by these programmes.

Despite the efforts made, a major obstacle still to be overcome is mal-nutrition due in part to an insufficiency of total food stuffs and also to a lack of the specific kinds of food, the essential or protective food stuffs. The cereal diet which no doubt forms the foundation of a nutritious diet should be supplemented by essential foods.

Kwashiorkar follows deprivation of protein in infants, endemic goitre follows a lack of iodine and beriberi follows a deficiency of thiamine.

Food policy is concerned primarily with the acceleration of the production of food grains but it cannot be a nutrition policy.

Fortunately for India dependence on essential food stuffs as agricultural products does not necessitate drastic changes in food habits. New and exotic foods are not required rather it is the production and consumption of similar food stuffs in appreciably larger quantities.

Objectives of a sound nutrition policy should be to establish tonnage goals for milk, protein-rich pulses, vegetables and fruits as well as food grains. For this reasonable forecasts of future population and its distribution into groups according to age, sex etc., are required. Instructional programme on a national scale will be necessary to ensure proper use of protective foods.

There must be support of training of teachers and of investigators in food and nutrition sciences.

The multiple nature of the problem requires that its solution receives an integrated endeavour. Involved are agriculture, animal husbandry, the health services, education, home science and services that are based on the community development programme. The responsibility should also be shared by industry, educational institutions and research organisations, as well as private citizens. The guidance and leadership for such a vast collaborative programme should be vested in an Inter-Ministerial Group in the Central and in State Governments. A division of Nutrition in the Ministry of Food and Agriculture should be assigned this responsibility, because the importance of agricultural production that is based on a broad national plan policy points impressively to the Ministry of Food and Agriculture as the key organisation to supervise a national nutrition programme. Identification of mal-nourished segments of the population and the nutritional rehabilitation of these segments must be a primary obligation of the Ministry of Health. Similarly the Ministry of Education could be expected to share responsibility for programmes of education in food and nutrition.

The Inter-Ministerial Group of the Government should have the consultative support of an Advisory Board composed of India's foremost scientists from colleges and universities, medical colleges, industrial food laboratories and research units, and of representatives of agriculturists, agricultural economists, biochemists, food technologists, home scientists and physicians actively concerned with the problem of nutrition.

Nutrition education to be successful in answering the What, Why and How of nutritional health must be a collaborative endeavour.

Training that gives reasonable familarity with the relation of the protective foods to health and with the methods of demonstration of their production and utilisation is essential for 3 levels of workers, *viz.*, workers at the top level qualified to plan and direct national and State national programmes; workers at the intermediate level who can administer the programmes for district blocks and large cities and thirdly workers at the village or community level who can carry on demonstrations of good nutritional practices. The top level workers should be post-graduates in nutritional sciences with field experience. The intermediate level workers should be graduates in agriculture, chemistry, home science, health education, medicine or social welfare. The Village Level Workers should be carefully selected; individuals capable of transmitting simple nutritional facts to families and these workers should be given special training courses.

It is clear that the number of trained workers who are available at the present time is wholly inadequate for the task in India.

It is improbable that the primary health centre can perform its proper function in nutrition education at the village level until there is a very large increase in the number of public health nurses. Participation of village school teachers in nutrition programmes is important because of their unique opportunities to influence children and through the children the parents. Such teachers should be fortified with one or more special training courses. Gram Sevikas and Gram Sevaks should be key workers in nutrition projects. Gram Sevikas can influence village women to improve their food practices. Emphasis on nutrition in the Community Development Programme is of the greatest importance. It is suggested that appropriate instruction be included in the training of as many categories of the existing staff as is possible in nutrition.

Although schools of agriculture, home science and of medicine are increasing in number their direct participation in applied projects such as nutrition has been slow. The School of Agriculture, Osmania University, the Allahabad Agricultural Institute, the Anand Agricultural Institute, the Directorate of Fruit Utilisation, Uttar Pradesh, the College of Catering and Institutional Management, Bombay, the Central Food Technological Research Institute, Mysore, the Department of Applied Chemistry, College of Science, University of Calcutta, All India Institute of Hygiene and Public Health, Calcutta, the All India Institute of Medical Sciences, New Delhi, the Christian Medical College and Hospital, Vellore, the Department of

Nutrition, Government of Bombay, (**Haffkine Institute**), the **Nutrition** Research Laboratories of the Indian Council of Medical **Research**, Hyderabad and similar institutions might serve as special training centres in expanded programmes of nutrition. Following are suggested measures to increase the quality of training in nutrition :—

(1) Re-valuation and revision of the training courses for block personnel and for village school teachers.

(2) Extension training and special demonstration units which will concentrate on improvement of food practices in the family and increased home production of protected foods ;

(3) Government support and assurance of the employment opportunities, so that greater numbers of college and university graduates may be drafted into the fields of nutrition, agriculture, home science, social welfare and public health ; and

(4) Formal recognition by the Central and State Governments of the importance of an adequate dietary and the need of nutritional education.

The expanded nutrition programme of the UNICEF which is being put into effect in certain States like Orissa, has for its objective increased village, school and home production of nutritionally valuable foods such as poultry and eggs, fish, fruit and vegetables ; distribution of the produce with the object of improving the nutritional status of pregnant or nursing mothers, young children at home and school children, nutrition education activity through schools, mothers clubs, health service personnel and community development personnel ; and training of various categories of personnel.

The programme will also include school lunch projects. Such nutritious school lunches however simple they may be, can serve as the focal point of a measure to make children and their parents aware of food values and of nutritional health. Government have not been able to progress in the school lunch programmes because of the cost factor. But they recognise the intrinsic worth of such programme. The Estimates Committee also recommended the desirability of a comprehensive programme for improving the standard of health of school children. At present there are a number of school feeding projects in States although the number of children involved is small. The most elaborate plan for supply of mid-day meals to school children has been launched by the Madras State and the results should be studied with care after a couple of years. Extensive efforts are being made by the Corporation of Madras and the benefits of the school feeding programme have been stated to be increased school attendance and decreased listlessness due to hunger. In view of the advantages of a carefully planned feeding programme conducted with the maximum support of parents and local communities, participation and encouragement by the Central and State Governments is strongly recommended.

Protein mal-nutrition particularly in children is a problem of considerable magnitude in certain poorer sections of the population. The UNCEF/F.A.O. have devoted attention to the preparation and use of a high protein plant supplement. While the development in England of a so-called "mechanical cow", which is a machine that integrates grass and similar plant tissues, separates the proteins from other constituents of plant cells, and yields the protein in the form of an edible meal of or flour is worth investigating, it is believed that the low economic status of the villagers would make it very difficult to popularise a processed protein food supplement unless there is a large enough subsidy for its manufacture, distribution, etc. The solution would seen to be to persuade India's farmers to make better use of their opportunities to produce protective foods. Meanwhile Government should lay emphasis on the development of dairies, encourage production of Bengal Gram and other edible pulses or legumes in larger quantities, encourage the use of the increased amounts of grams and other legumes and of ground by a programme of nutrition education, encouragement to the manufacture of high protein meals or flours from groundnut and cottonseed, sayabean, seasamum etc., and encourage the use of high protein meal of flour as a direct supplement in school feeding, institutional feeding, industrial canteens, military feeding etc. etc.".

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Appendix B-17

Summary of Certain Interesting Observations and Comments made by Dr. J. D. Castro in his Book 'Geography of Hunger'

The publication entitled "Geography of Hunger" by J. D. Castro, Director of the Nutrition Laboratory, University of Brazil, has been brought to our notice. The author mentions that there are two schools of thought about world hunger which, in his opinion, are really dangerous to the future of humanity because they falsify the social reality of the problem. One school attempts to prove that famine is a natural and incurable phenomenon and the other theory was that our only salvation was a forced reduction in the world's birth rate. The study of hunger in different regions of the world will make it clear that human societies are ordinarily brought to the starvation point by cultural rather than by natural factors, that hunger results from grave errors and defects in social organisations. Over-population does not cause starvation in various parts of the world but starvation is the cause of over-population. There are various latent deficiencies that have developed so disastrous among the more civilized human societies. There are for instance.

(a) Dietary monotony which results when civilisation leads man to base his alimentation on a restricted number of food elements.

(b) The nutritional instinct of civilized man has became dulled to such an extent that he is no longer aware of what his organism needs in order to function well. His appetite is more psychical and is directed towards the pleasure of eating more than towards the satisfaction of nutritional needs.

(c) Protein hunger in greater or lesser degree is universal.

(d) There is a shocking reduction in organic resistance to disease in general and particularly to infectious diseases.

(e) The psychological effect of hunger is to make sex important enough to compensate emotionally for the shrunken nutritional appetite.

(f) A comparison of the birth rates of various countries with the daily consumption of animal proteins shows that there is a distinct correlation between fertility and protein consumption, namely, the greater the protein consumption, the lesser the birth rate. Hunger is responsible for the overproduction of human beings, excessive in number and inferior in quality who are hurled blindly into the demographic metabolism of the world.

Coming to India Dr. Castro considers that the region of starvation in India is upheld by elements disguised and hidden in the complexities of its people's social-economic life. The distribution of rain is extremely irregular in the Indian peninsula. More than three-fourth of the population is engaged in agriculture. Hindus have developed a type of diet which is overwhelming by vegetable in origin. In the greater part of the country rice is eaten with vegetables and with small quantities of vegetable oils and fish. Meat consumption in India is extremely low; consumption of milk and its derivatives is equally low. India is estimated to contain half the world's cattle, but they are so badly fed that they produce hardly any milk worth mentioning. The biological structure of the Indians is most seriously undetermined by the extreme shortage of high-value proteins. Protein deficiency also results in the frequency of specific diseases like cirrhosis of the liver. One further effect of poverty in proteins is a lowering of appetite.

Chronic hunger in India in Dr. Castro's view is one fundamental cause of the high death rate. The great tragedy is not so much the number of people who die but the age at which they die. Infant mortality is very high. Half the Indian children are born merely to consume a starvation diet and to die before they are old enough. When Indian population is compared with her land area, it can be seen that here average relative density of 250 per square mile, though not low, is not among the highest in the world. It is exceeded by a dozen countries including the relatively prosperous countries like Belgium, Holland, and England. What differentiates India's demographic character from those of the densely populated European countries is its rural nature. Farming is done only on more fertile lands leaving very large tracts of land uncultivated. Misery exists in India neither because the nation is overrun by people nor because the soil is saturated. Low farm income in India is primarily due to primitive methods of cultivation, and redimentary techiques coupled with capricious monsoons, inadequate fertilisers, etc. The working capacity of the Indian peasant is extremely low due to chronic undernourishment and low level of health and hygiene".

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Appendix B-18

INTERIM PROPOSALS OF THE SCHOOL HEALTH COMMITTEE

(1st July 1960)

CHAPTER I

INTRODUCTION

Children constitute the most vital segment of the population. The health and well-being of children should obviously receive the highest priority in any scheme of national development. The expenditure incurred on the improvement of health of this group would pay rich dividends in raising the standard of health of our growing generation. For this reason, programmes designed for the betterment of the health of children should be considered as of pivotal importance from any national point of view. In all advanced countries of the world, such programmes have received the highest priority. Indeed, it may be claimed that there is no advanced country to-day which does not have a comprehensive school health service or a school meal programme as an integral and important part of its health activities. The high standard of health prevalent in these countries is largely attributable to effective school health programme. The system of Basic Education in India as expounded by Mahatma Gandhi contains the essential ingredients of a school health service. Unfortunately this has not been introduced in the country on any wide spread basis.

The present position with regard to the health and nutritional status of the children in our country, is far from satisfactory. Extensive surveys carried out in different parts of the country have pointed to the fact that the sickness and death rates of children in India are among the highest anywhere in the world. The incidence of diseases directly attributable to malnutrition and other preventable causes is also distressingly high. For example, a recent country-wide survey has revealed a very high incidence of protein malnutrition among our children. It has been computed that the great majority of cases of permanent blindness in our children are easily preventable ; and that the commonest cause of blindness in our children is malnutrition. Studies carried out in different scientific institutions have shown that the damage caused by ill-health and malnutrition in childhood often leads to permanent and irreparable damage. A recent health survey of University students carried out in West Bengal showed that nearly 90% of the students had exhibited signs of ill-health 67% of the students had defective vision. These considerations point to the urgent and imperative need for the immediate institution of programmes designed to improve the health and nutritional status of children.

The recommendations contained in this report are modest considering the vast magnitude of this problem. In drawing up the recommendations, the present limitations with regard to resources, trained personnel etc., have been kept in mind and a programme which is practical and feasible under the existing conditions has been suggested. It must be remembered that no allocations for school health or school meal programmes had been made by the Union Government in the First and Second Five Year Plans.

The proposal to introduce universal, free and compulsory primary education for all children up to the age of 11 by 1965-66 which is now envisaged by the Government of India makes it all the more necessary that a comprehensive school health and school meal programme is taken up at this stage as an integral part of our national Plan. It is hoped that the minimum programme which has been outlined in the following chapters would receive immediate and top priority and find an important place in the Third Five Year Plan. The problem is so urgent that it brooks no delay.

CHAPTER II

SCHOOL HEALTH SERVICE

The Present Position

The aims of school education can obviously be achieved only when the children have optimum health. A suitable school health programme with well-organised health education activities is obviously essential for the full realisation of the objectives of education. Indeed in most advanced countries health is considered as a major objective of education.

School health services do not exist in most parts of our country to-day. In some States limited school health programmes are in operation, but even these have obviously not been organised on proper lines being largely confined to medical inspection of children. No arrangements for the follow-up or for the promotion of positive health are included in the few existing school health programmes.

The object of School Health Service

A comprehensive school health service should include the following :—

(1) Periodical medical inspection of children.

(2) Institution of remedial measures to correct the defects observed during the medical inspection and follow-up.

(3) Control of communicable disease, immunisation programme including particularly vaccination against smallpox, typhoid and tuberculosis.

(4) Ensuring proper environmental sanitation in the schools including attention to housing facilities, protected water supply, drainage and disposal of waste.

(5) Health education to impart knowledge and develop healthy attitudes and habits.

(6) Improvement of nutritional status.

(7) Promotion of appropriate social and emotional behaviour.

Organisation of a School Health Service

The school is a part of the social structure of the community. School health service should, therefore, form part and parcel of the general health service for the community. A parallel organisation separate from the Community Health Organisation and solely devoted to school health service is neither desirable nor practicable under the existing circumstances.

Since, at present, the Primary Health Centres form the basic units for health activities in rural areas, it is desirable that school health services are carried out as part of the activities of the existing primary health centres. At present a primary health centre serves a population of about 60,000. The number of children between the ages of 6 and 11 years in the area covered by a primary health centre will be roughly about 6,000. With the existing staff in the primary health centres, it would not be possible to institute a satisfactory school health programme in these centres. At present most primary health centres have only one medical officer, one health visitor, one health inspector and four midwives each. It would not be possible for this staff to undertake, in addition to community health programmes, a comprehensive school health service programme also. The inclusion of a school health service programme among the activities of the primary health centre will necessitate the appointment of at least one additional medical officer and one auxiliary nurse-midwife at each primary health centre. The ideal medical officer population ratio for a comprehensive public health programme including school health programme would be 1,10,000. It is, however, realised that in the present circumstances it will not be possible to achieve this ideal in the immediate future.

Medical Officers.—At present the State Governments are encountering considerable difficulty in the matter of recruitment of medical personnel for appointments to primary health centres in rural areas. The factors responsible for this state of affairs have to be examined carefully, and conditions should be created which would overcome this major impediment in the institution of health programme in rural areas. While in some States there is dearth of medical personnel, there is at least one State *viz.*, West Bengal, in which there is a surplus of medical personnel. It appears that problem of non-availability of trained medical personnel in certain states can be solved to some extent by creating conditions which will attract such surplus personnel to those States. With a view to attract medical personnel for work in rural areas, the following incentive may be offered :—

(1) Better salary scales for medical officers working in rural areas.

(2) Facilities for housing and reasonable amenities,

(3) Suitable arrangements for the schooling of children of these officers and the payment of additional allowances for this purpose.

(4) More attractive leave and travel facilities.

(5) Facilities for periodical refresher courses in teaching institutions and provision for the distribution of technical literature.

(6) Recognition of the work carried out in the rural areas in the shape of advance increments and institution of a system by which after a term in the rural service the officers will be entitled for posting in urban institutions.

(7) Provision of proper transport facilities to enable the officers to discharge their duties satisfactorily.

In this connection it may be pointed out that the West Bengal Government in their Order No. Medi/636/SS-81/51, dated 22nd January, 1958 have provided additional allowances and free housing for doctors working in rural areas.

If, in spite of such incentives, the State Governments are unable to recruit two medical officers for each primary health centre, the only practical alternative would be to institute school health service in only a part of the area covered by the primary health centre. It might be possible for one medical officer in a primary health centre to look after such a school health programme in a limited area covering about 1,000 children as against 5,000 children in the entire area.

The possibility of enlisting the co-operation of private practitioners to carry out medical inspection of school children on a part-time basis has been suggested. Where adequate numbers of private practitioners are forthcoming for such service, such a scheme may perhaps be possible. It must be remembered, however, that apart from medical inspection, the school health service includes the follow-up of children and other items mentioned above. How far private practitioners, recruited on a part-time basis, can fulfil the objectives of a health programme is a moot question. It would appear that such a scheme would only be feasible where there is a large surplus of private practitioners.

The Teacher.—Apart from medical officers, the school teacher has to play an important role in the school health activities. In the prevailing conditions it would be impossible to depend solely on medical officers and nurses to shoulder the full responsibility of school health service. Apart from this consideration, the teacher by his very position is legitimately expected to play a vital and important part in the school health programme. To enable him to discharge this task satisfactorily, adequate training in the field of school health and health education would be necessary. This would mean that there should be a reorientation of the existing pattern of teacher training. Teacher-training institutions should place greater emphasis on the practical aspects of Health Education. It is understood that some basic training schools in the country are imparting health education in the sense mentioned above as a part of the programme of teacher-training. Such centres are, however, few. In the Third Five Year Plan, the Government of India contemplate converting a large number of present teacher-training institutions into basic teacher-training institutions of the above type. There is also a proposal to give short-term orientation courses in the basic system of teacher training to primary school teachers who have not received training in basic education so far. In the reorientation courses and in the syllabus for the proposed expanded basic training programme sufficient emphasis should be laid on health education and school health programmes.

With such training in health education and school health service it should be possible for the teacher to undertake the following functions connected with medical inspection of school children :—

(1) Daily observation of children with a view to spot any deviation from normal health.

(2) Recording of height and weight, and testing vision.

(3) Maintaining of health record of the child including family history.

(4) Assisting the doctor in the course of the medical examination of the children.

(5) Follow-up of children with defects with a view to ensure that the recommended remedial measures are adopted.

(6) Giving first-aid and care during emergency.

As in the case of medical officers, unless proper incentives and reasonable emoluments are given, it will be impossible to enthuse the teachers to participate in this programme effectively. In areas where school health sciences and school meal programmes are introduced the salaries of teacher would require upgrading.

Auxiliary Nurse-Midwife.—The present training programmes for auxiliary nurse-midwives do not include training in school health service. Considering that it would not be possible to find public health nurses in adequate numbers for school health programmes, the existing auxiliary nurses-midwives should receive short-term training courses in school health work. Furthermore, for the training of the auxiliary nurses-midwives in future, the syllabus should be so revised as to place sufficient emphasis on school health and health education.

Co-ordination & Supervision

With a view to co-ordinate and supervise school health service programmes in the primary health centres, it might be desirable to have a school health officer at the district level and a school health bureau located in the Public Health Directorate of that State. An officer of the status of Assistant Director of Public Health should be in charge of such a bureau. Such a bureau may be advised and assisted by a School Health Committee consisting of representatives of the Department of Education, Health, Community Development & Agriculture and Social Welfare Organisations. It would be helpful to have such a Committee at the Primary Health Centre level also. Through such a machinery, it would be possible to ensure continued supervision, guidance and co-ordination of school health work over the entire state. It is noted that the Government of India have also recommended the constitution of such committees in each State under their scheme for the establishment of State Health Education Bureau.

Medical Inspection

In view of the limited resources available, emphasis at this stage should be placed on medical inspection of the children of primary schools. A thorough medical examination of all pupils must be carried out at the time of their entrance into the primary school and again four years later. The limited facilities available to-day do not permit medical examination at more frequent intervals. It is realised, however, that if the facilities permit, it would be much more satisfactory to have such examinations conducted annually.

The auxiliary nurse-midwives and teachers should help the medical officers with regard to the recording of history and determination of heights and weights of the children. With such assistance, it should be possible for a medical officer to complete the medical examination of each pupil in about 10 minutes on an average. If facilities permit, it would be desirable to invite the parents to be present during their examinations.

In addition to these periodical medical inspections, the medical officer will examine the pupils reported to be unwell or below par by the school teacher or the auxiliary nurse-midwife. It is expected that the auxiliary nurse-midwives should visit the school at least once a month. During these visits, it would be possible for her to collect information regarding fresh illnesses and also absenteeism of the children. This might facilitate institution of remedial measures if called for. It should be possible for the teacher with some preliminary training to spot some common disease known to be prevalent amongst school children like scabies, pediculosis capitis (lice) etc. Medicaments necessary for the treatment of these conditions may be provided in the school along with the first-aid equipment so that these disorders can be attended to by the teacher himself or the auxiliary nurse-midwife.

Institution of Remedial Measures and Follow-up

An important drawback with regard to the school health service programmes currently in operation in different States of the country is the absence of a satisfactory system for institution of remedial measures and follow-up. If the school medical inspection should yield satisfactory results, it is essential to ensure that facilities for the corrections of the observed defects and follow-up of the subjects concerned are also provided. In this connection, the following steps are necessary :—

(1) If the defects observed are of such a nature that they could be treated in the primary health centre, the medical officer and the auxiliary nurse-midwives should arrange for such treatment in the centre itself.

(2) Where the defect is of such a nature as to call for more specialised treatment, transport provided for the primary health

centre should be made available for transport of the pupils concerned to the nearest hospital where such specialised facilities exist. It will be the responsibility of the teacher to ensure that the pupil suffering from the defect undergoes appropriate treatment either at the centre itself or in the nearby hospital as the case may be.

(3) 'The State Governments should equip one hospital for a group of primary health centres with adequate facilities for specialised treatment of the cases referred.

(4) Special beds should be reserved in the hospitals for accommodating the pupils referred for treatment. Special arrangements may also have to be made in the out-patients department in such hospitals for the treatment of these children. The over-crowding in hospitals and the fact that no special provision is being made for attention to children are largely responsible for the present unsatisfactory situation with regard to the follow-up of school medical inspection.

(5) In case States like West Bengal, an attempt is being made to organise a system of periodic visits to health centres by a team of specialists. Such a system has its advantages and where facilities permit the possibility of adopting such an arrangement may be explored.

(6) It will be the responsibility of the teacher and the auxiliary nurse-midwives to maintain follow-up of the pupils who have received treatment in hospitals and the centres.

Control of Communicable Diseases

The incidence of communicable diseases in our country is high. The control of communicable diseases should, therefore, be the one of the main concerns of the school health service. Prompt detection of communicable diseases and isolation of cases and protection of the contacts should receive attention. It should be possible for the teacher with some training to spot common communicable diseases in the pupils. It is expected that where the teacher spots such cases of communicable diseases, he immediately contacts the medical officer for confirmation of diagnosis and for institution of appropriate steps.

An important item in the school health will be immunization of the children against preventable diseases. For the present, emphasis may be laid on compulsory primary or re-vaccination against small-pox and B.C.G. vaccination. Their vaccinations must be carried out at the time of entrance to school. During times of epidemics, it should be the responsibility of the school health service to ensure that appropriate preventive inoculations are undertaken in the schools. In areas where epidemics have been known to recur with regular periodicity, it would be necessary to undertake such preventive inoculations as a routine measure to cover the dangerous periods.

Environmental Sanitation

It should be the object of a comprehensive school health programme to ensure that healthy environmental conditions are provided in the schools. Many of the existing school buildings unfortunately do not conform to the minimum health standards. Faulty construction of building, poor ventilation and lighting, lack of washing facilities, insanitary toilets and other deficiencies will obviously contribute to the ill-health of the children. It is desirable that where new school buildings are being put up, the advice of public health authorities is obtained in the planning and modelling of these buildings. It should also be possible without incurring vast expenditure, to improve the ventilation, flooring and to provide at least the minimum facilities like water supply and latrines to the existing schools. The importance of providing protected water supply and a satisfactory system of disposal of wastes cannot be over-emphasised. The Community Development Block agencies should accord the highest priority to the provision of basic sanitary facilities to the schools. It may be mentioned that the improvement of environmental sanitation of schools has also a great educational value and it may be used for the inculcation of sound healthy practices and habits amongst children. The institution of school meal programme also is dependant on the provision of such minimum sanitary facilities in the schools.

Health Education

It should be the endeavour of a comprehensive school health programme to impart scientific information about health matters and inculcate healthy attitudes and habits into school children. In this task, the teacher has naturally the most important role to play. To be able to undertake such health education, the teacher should himself obviously receive appropriate training. This subject has been referred to in a previous section of this report. It is understood that the Education Ministry has formed a Committee on health education and nutrition education and that the W.H.O., in collaboration with the Government of India, is conducting a project in health education. The recommendations of that Committee and the results of the project should be taken note of in the planning and guidance of school health activities in the country.

Financial Considerations

From the foregoing paragraphs two types of approaches have been described to attend to the health needs of school children. (1) The strengthening of the existing staff of the primary health centre by an additional health officer and an auxiliary nurse-midwife with the provision of adequate amount of drugs and necessary equipment. (2) To provide necessary facilities for conducting school health services in a limited area of the primary health centre by existing staff of the primary health centre. This may be strengthened by utilising the services of private medical practitioners in such States where the services of such doctors are available in response.

The first method appears to be the most appropriate in existing circumstances. It should be the basis for a future development of an effective school health programme. The staff, drugs and supplies will involve an additional expenditure of about Rs. 9,000 for each primary health centre per annum.

As described earlier, supervisory and guiding staff will have to be provided at the district and state level. At the district level, there will have to be a district school health officer with minimum ministerial staff. The recurring expenditure of this account will be about Rs. 10,000 per district per annum.

The State School Health Bureau will include a specialist in school health work and auxiliary personnel who cannot only plan, organise and guide school health activities but can also undertake training and research work in this speciality. This will involve an expenditure of about Rs. 20,000 per annum.

It is proposed to start school health activities in 1,000 primary health centres of Community Development Blocks during the first year of the Third Five Year Plan and increase the number on a phased basis to 5,000 centres by the last year of the plan period. The following will be the year-wise expenditure during the Third Plan.

	I YR.	II YR.	III YR.	IV YR.	V YR.	Total
No. of Primary Health Centres .	1,000	1,000	2,000	3,000	5,000	5,000
No. of school children (6—11 years) (figures in lakhs) . . .	50	50	100	150	250	250
Expenditure on school health service (in lakhs rupees) . .	101	101	202	303	505	1,212
Expenditure on training of personnel (in lakhs rupees) . .	50	7·5	7·5	10	5·0	35

The total expenditure is estimated to be Rs. 12.47 crores and 50% of this expenditure should be borne by the Centre and remaining half by the State Governments.

CHAPTER III

SCHOOL MEAL PROGRAMME

The Present Position

It is now generally agreed that the major cause of ill-health of school children in malnutrition. For example, a health survey amongst students undertaken in Calcutta revealed that 77 per cent of the students exhibited varying grades of malnutrition. The sanitation in other areas of the country is no more satisfactory. If school health programmes should prove effective and yield the returns expected, it is obvious that this major source of ill-health should be given immediate attention. A school meal programme must, therefore, form a major item of school health activity. Even in advanced countries where nutritional status of children may be considered satisfactory, such school meal programmes exist. A comprehensive school meal programme covering the entire school going population is currently in operation in Japan. In the present context of high incidence of malnutrition amongst our children the imperative need for the immediate institution of country-wide school meal programme is obvious.

In a few States there are schemes already in operation for the distribution of mid-day meals for school children. For example, the Madras Corporation has been conducting very successfully a scheme of free-mid-day meal distribution for school children for the past several years. More recently the Government of Madras have started school mid-day meal programme in other areas of the Madras State. School meal programmes of a somewhat limited nature also exist in some schools in other States like Bombay, Uttar Pradesh and West Bengal. In Bombay city, a school meal programme covering several schools is being carried out under the guidance of the State Nutrition Officer.

The Objectives

(1) The main object of a school meal programme is to improve the nutritional status of the children. This would imply that the meal supplied in the school should be such as would off-set to some extent the deficiencies in the home diets of these children.

(2) A well-conducted school meal programme will also serve as a valuable means of nutrition education. Through such a programme it would be possible to inculcate into the pupils sound dietary habits and attitudes. Indeed, it would even be possible through the programme to influence the dietary habits of the parents, the family and the entire community.

The Magnitude of the Problem

Our constitution has laid down that the State shall endeavour to provide free and compulsory education for all children up to the age of 14 years by 1960. Unfortunately, it has not been possible to realise this objective. It has, however, been decided that universal free and compulsory education for all children up to the age of 11 years should be introduced by 1965-66. It is expected that by the end of the Third Five Year Plan, school-going facilities will be provided for 532 lakhs of pupils. At present school-going facilities are available for 330 lakhs of pupils.

The experience gained from the school meal programmes carried out in different parts of the country indicate that the average minimum daily cost per meal would work out to 10 to 12 nP. On the basis that meals have to be provided for about 200 days in the year it will be seen that the total cost involved in the provision of free school meals for the entire school-going population between 6 and 11 years would run to several hundred crores of rupees. Since it would be obviously impossible with our limited resources to undertake such an ambitious programme, it will be necessary to start a phased programme in the first instance. It should be the minimum objective to cover at least one-fourth to one-fifth of this population during the Third Five Year Plan. This raises the question of selection of priorities.

To yield the maximum benefits, the school meal programme has to be integrated with the school health services. It will, therefore, be desirable to institute school meal programmes in the schools located in the Community Development Blocks where school health programmes can also be instituted according to the recommendations in the previous chapter. It is expected that by the end of the Second Plan period, there will be about 3,111 Blocks and by the end of 1963, five thousand Blocks in operation. It has been calculated that there will be approximately 5,000 children attending schools in each Community Development Block. There would thus be 15 million children between the ages 6 to 11 years in the Community Development Block areas at the beginning and 25 million at the end of the Third Five Year Plan period. It is desirable that the entire school-going population between 6-11 years in the Community Development Blocks should be covered. It must be remembered that in addition to the above, the school-going children in the urban areas have also to be considered. The immense magnitude of this problem, however, is a strong argument for initiating an immediate programme rather than shelving it. In the following pages, a plan for a minimum standard in this direction is outlined.

The Composition and Distribution of Meals

A rational school meal programme must be such as to contribute to the correction of the nutritional deficiencies prevalent in the student community. Extensive dietary and nutrition surveys carried out amongst the school children in different parts of the country have indicated that the major types of malnutrition encountered among the population are attributable to the deficiency of protein, vitamin A, vitamin B complex and calcium. In addition, there is also evidence of gross caloric under-nutrition. While malnutrition is widespread the types of nutritional deficiencies may vary from region to region. These regional variations must be taken into consideration in the planning of menus for school meal programmes.

It may be generally stated that the school meal should provide approximately one-third of the dietary and nutritional requirements of the child. Considering that the dietary of the poor segments of the population is deficient in calories, the school meals should provide not only sufficiency of protective elements but also a reasonable allowance of calories. The school meal programme should obviously be based on cheap, nutritious, locally available foods. This is particularly important in the case of rural areas. It must be emphasised that one of the important objectives of the school meal programme is to educate children and their parents in the use of locally available nutritious foods in the dietary pattern of the community with the resources which are within their reach. Menus suitable for school meal programmes have been published by the Union Health Ministry, the Indian Council of Medical Research and the Nutrition Departments of certain States like Bombay and West Bengal, and it is understood that such menus suitable for different regions are also being worked out by other States of the country. It would thus be clear that a large body of information based on scientific data would be available for the authorities in different regions to plan school meals suitable for the respective regions.

In the choice of menus, apart from nutritional considerations, psychological factors also have to be taken into account. A school meal programme depends, for its success, on the cooperation of the community. It is, therefore, necessary that the meals provided must be popular and acceptable. At the same time, the objective of improving the dietary habits of the community through the programme must not be lost sight of. The other important considerations which should govern the choice of menus are ease of preparation, handling and distribution without contamination.

Dietaries of our poor segments are such that the supplementation of even small quantities of milk to these children as a part of the school meal would prove of immense benefit. Unfortunately, however, in the present context it would not be possible to do this on a country-wide scale. In places where this is possible it would be ideal to include milk in the meals. It is understood that it has not been possible to make a full and effective use of the supplies of skimmed milk made available to this country by the UNICEF. If the situation can be rectified, it might be possible to obtain some skimmed milk for use for the school meal programme. The provision of milk even on one or two days in the week would be worth while. "Toned" milk which is currently being used in the cities of Delhi, Bombay and Madras would be cheaper and with the addition of vitamin A, this would be just as nutritious as fresh milk. Where facilities permit, the use of such "toned" milk as a part of the school meals may be explored. In certain areas particularly in urban centres, it may be possible to incorporate processed protein-rich foods in the school meal menus. For example, it is understood that the multi-purpose food prepared by the Central Food Technological Research Institute, Mysore, is being used in this manner in certain parts of Madras State. It is, however, obvious that our school meal programmes cannot be dependant on products involving elaborate centralised technological processing. Problems connected with the transportation, handling and storage of such food imposes limitations to the wide use of these products. However, the possibility of producing processed foods rich in protein and other protective elements on a regional basis for incorporation into the school menus deserves exploration. It must be pointed out, however, that the main emphasis in the preparation of the school meal menus must be placed on the natural locally available cheap foods.

An important consideration which would govern the choice of menu whould be its cost. The problem in this regard is to provide food of the best nutritional value within the low cost permitted by the circumstances. The experience with regard to the school meal programmes in the different States indicates that it would be possible to provide school meals of reasonable nutritional value within the cost of 12 nP. per meal per day.

It is imperative that strict hygienic precautions are observed and enforced in the matter of preparation and distribution of meals to children. Otherwise, the school meal programme may well turn out to be a source of ill-health and may defeat its very purpose. It is obvious that this implies the provision of the following amenities in schools:

(1) Protected water supply in adequate quantity.

(2) Sanitary environment for the preparation, storage and distribution of food.

(3) Adequate space for the feeding of the children.

(4) Provision of clean utensils for the distribution of the food and drinking water.

(5) Adequate facilities for the disposal of garbage where satisfactory sanitary conditions do not exist. It would be safer to rely on "ready to serve" types of menus in preference to those which require cooking and washing facilities.

Organisation

It has been computed earlier that the average cost of meal would work out to about 12 nP. The question arises as to whether this cost is to be borne entirely by the Government or whether it has to be, in whole or in part, borne by the community. In the mid-day meal programme conducted by the Madras Corporation, the entire cost is being borne by the Corporation. On the other hand, in the school lunch programme, organised by the Madras Government in other areas in the State, nearly 40 per cent of the cost of the meal is met by the community, and the remaining by the State Government. In the school meal programmes in operation in other States the cost of the meal is partly met by the community in certain schools while in certain others the cost of the meal is being entirely borne by the State Government. It has been pointed out that apart from the practical issues involved in a school meal programme the cost of which is borne by Government in full may not be desirable for psychological reasons. On the other hand, it has to be recognised that the economic conditions of the vast segments of the population whose children are in need of the school meal are such as would make contribution by the parents virtually impossible. Taking these factors into consideration, it would appear that the following policy with regard to the apportioning of the contribution by the Government and the community to the cost of the meal may be followed :—

(1) Of the total cost of the meal only 50 per cent may be borne by the Government and the remaining 50 per cent by the parents, the community, local authorities and voluntary agencies.

(2) It is not envisaged that every child benefiting from the programme should contribute 50 per cent of the cost of the meal. It is expected that well-to-do parents at one end of the economic scale would be able to meet the entire cost of the meal for their children while the poorest segments at the other end of the scale would be supplied the meals free. The remaining groups would have to meet 50 per cent of the cost of the meals. Where, however, contributions from voluntary agencies are forthcoming, it might be possible to reduce the contributions from parents still further. In the meal

programme conducted by the Madras Corporation, free mid-day meals are being provided only for children with family income of less than Rs. 50 per month. In the programme instituted by the Madras Government in the mofussil areas of the State, it is understood that parents with income exceeding Rs. 75 are made to contribute the entire cost of the meals. The question as to how exactly 50 per cent contribution from the community has to be obtained has to be decided after taking into consideration various regional factors. This decision has, therefore, to be left to the State Governments concerned.

In certain regions, it should be possible to meet partly the cost of the school meal through the raising of kitchen gardens around the school. An intensive programme for the encouragement of the raising of such school gardens with a view to cultivate vegetables, fruits and pulses, which can be incorporated in the school meals, is highly desirable. At present, the absence of adequate fencing and water supply constitutes an impediment to such a programme. It should be the endeavour of the Agriculture Department to encourage this programme through the supply of seeds, seedlings, manure, fencing and the requisite implements. The teachers should be enthused to participate in such a programme. The parents of children may be also encouraged to contribute to this effort by direct participation in the cultivation and raising of these gardens. This might be looked upon as a contribution of "Shramdan" to the school meal programme. It should be possible to pursue this programme on an extensive scale in the junior and senior basic training schools. In such schools, it should be possible to include agriculture, animal husbandry and poultry farming amongst the crafts in the training programme. The teachers receiving training in basic training colleges may well be expected to extend the programme to other primary schools. In some of the schools, it may be possible to develop fish culture. Fish, tnus made available, may be used for feeding the children where fish is popular and generally consumed, otherwise the fish can be marketed.

The Social Welfare Organizations of repute and standing particularly the women organisations, may be brought with advantage into the school meal programme. These organisations would prove valuable in the matter of preparation and distribution of the school meals. With the establishment of Panchayats and Block Samitis in the different States, it may be possible to entrust the school meal programmes to these organisations. The Panchayat in the village may be educated with regard to the great importance of the programme and must be enthused to undertake the full responsibility for its implementation. It may then be possible to constitute a small committee of the Panchayat to administer the scheme. Such a committee may usefully include the office bearers of the local women organizations. It will be the responsibility of such a committee to make the necessary arrangements for the procurement and storage of the food necessary for the programme, and for the preparation and distribution of the meals.

It has already been pointed out that the school teacher has a very vital role to play. He will be responsible for ensuring regular distribution of the food with the help of the voluntary organization as may be prescribed by the Panchayat. The administration of the school meal programme will naturally be ultimately the responsibility of the Department of Education. It will, however, be necessary to have co-ordination between the Departments of Health and Food and Education and agriculture and community development at the States and district levels. The School Health Committee recommended earlier for the implementation of the School Health Service programme, may be entrusted with the task of co-ordinating the School meal programme also.

One of the obstacles in the effective implementation of school meal programme is lack of properly trained personnel. This can be overcome in part by arranging short courses, seminars and practical training for the teachers and other participants in the programme. It can be confidently expected, however, that the re-orientation in the teacher training programme which has been suggested in an earlier chapter may provide the necessary knowledge to the teachers for effectively participating in this programme.

The School Meal Programme—A Medium of Nutrition Education

Nutritious food served in a sanitary and attractive manner is an education in itself. The School Meal Service can be used as an effective medium for the education of the pupils in the role of good nutrition for the maintenance of sound health. The School Meal Programme will also provide opportunities to educate the pupils in the following :—

Relation of food to growth and health ; the importance of different specific nutrients contained in the meal to health ; the need for enforcement of sanitary conditions for the preparation, distribution and serving of meals ; familiarisation with foods of good nutritive value not in common use in the community ; removal of wrong dietary habits, taboos and prejudices ; effective practical instruction in personal hygiene in relation to food ; experience in growing of food in the school gardens.

Teachers should use suitable teaching aids and specially the actual foods, school lunch, school garden, etc., to help the children gain knowledge and develop proper attitudes and practices

Financial Considerations

Each of the Community Development Blocks will have approximately 5,000 children of age-group 6-11 years. It is proposed to start the school meal programme for primary school children in 1,000 blocks during the first year of the third plan. The programme will be extended on a phased basis in the subsequent years covering all the children in 5,000 blocks by the end of the plan period. Taking that a School meal scheme will cost about 12 nP. per child per day and that there will be 200 working days in the year, it is estimated that the programme will involve an expenditure of Rs. 1,200 lakhs during the first year of the third plan and 6,000 lakhs in the final year. The following table gives year-wise expenditure during the Third Plan period and the number of children that will be benefited.

	Ist Year	II Year	III Year	IV Year	V Year	Total
No. of Blocks	1,000	1,000	2,000	3,000	5,000	5,000
No. of school children (6—11 years) (in lakhs)	50	50	100	150	250	250
Expenditure on school meal @ Rs. 24 per child per year (in lakhs Rupees)	1,200	1,200	2,400	3,600	6,000	14,400
Expenditure on Training of personnel (in lakhs Rupees) . .	5·0	7·5	7·5	10	5·0	35

The total cost is estimated to be about Rs. 144 crores in the third plan. The Government of India's assistance for implementing this scheme will be approximately Rs. 72 crores. It is recommended that the Government of India's share of expenditure should be met by the Ministries of Food and Agriculture; Communty Development and Co-operation, Education and Health in an equal proportion.

The remaining half of the expenditure will have to be met by the community, local bodies, voluntary organizations and the State Governments.

It is expected that some of the International Organisations like F.A.O., UNICEF, Wheat Associates (U.S.A.) may be interested in a nation-wide school meal programme. The Government of India may like to consider the assistance from such organizations for implementing the above proposals.

CHAPTER IV

CARE OF THE PRE-SCHOOL CHILD

In the previous chapter, programmes designed to improve the health and the nutritional status of children between 6 to 11 years of age have been discussed. It is agreed on all hands that from every point of view the pre-school child between the ages of 1 and 5 years constitute an even more vulnerable segment of the population than children of the school-going age. The worst ravages of malnutrition are to be encountered in this pre-school age group and much of irreparable harm arising from ill-health and malnutrition occurs during this period. It is, therefore, recognised that this segment of population stands in greater and more urgent need of protection than even the school-going group. However, an important impediment to the institution of comprehensive nutritional programmes designed for the betterment of the pre-school group is the fact that we have at present no effective machinery through which we could reach the great majority of this group. While we can reach the children between ages of 6 and 11 years through the medium of the school and the infants through the medium of the Maternity and Child Welfare Centres, there are at present no suitable places of assemblage for large segments of the pre-school population. The fact that in this report greater attention has been apparently bestowed on the school-going group stems from the realization of this important limitation.

Organisation of pre-school Nutrition Programme

However, the proposal of the Union Ministry of Education to expand the pre-primary education in the country and the creation of a network of "Balwadis" by the Central Social Welfare Board in recent times afford some scope for the institution of programmes for the nutritional betterment of the pre-school children. There are at present 630 pre-primary schools in the whole country serving 78,450 children. It is expected that by the end of the year 1960-61, the number of pre-primary schools would increase to 1,300 covering 1,50,000 children. It is understood that the Union Ministry of Education are proposing to provide pre-primary schools, pre-primary classes for baby-care sections and 'Balwadis' to be attached to the existing primary schools. It has been tentatively proposed during the Third Five Year Plan to open such pre-primary schools and baby-care sections which will be attached to 5,000 primary schools. If this proposal is included in the Third Five Year Plan, it should be possible to reach a considerable proportion of the pre-school population of the country.

The Social Welfare Organisations and voluntary agencies could be entrusted with the responsibility of implementing nutritional programmes meant for pre-school children. At present apart from the Central Social Welfare Board, there are other organisations of repute and standing engaged in social welfare activities. It should be possible to evolve a machinery through which the activities of the different Social Welfare Organizations could be co-ordinated. Such a machinery should be able to undertake the implementation of nutritional programmes for pre-school children. Apart from this media of pre-primary school, 'Balwadis' and 'Mahila Samitis' it should also be possible to reach a portion of pre-school children through domiciliary visits by auxiliary nurses, mid-wives based on Maternity and Child Welfare Centres and Primary Health Centres.

Under the present circumstances, nutritional programme for the pre-school children will centre round the distribution of skimmed milk provided by UNICEF. At present a great majority of the pre-school children do not benefit from the skimmed milk distribution for the reasons discussed above. It should be the object of the proposed programme to remedy the situation. The absence of proper machinery for distribution of skimmed milk to pre-school children has resulted in the fact that a large percentage of the skimmed milk made available by the UNICEF for this country has been left unused.

'Balwadis', 'Mahila Samitis' and the pre-primary schools of the Community Development Blocks, the social welfare organizations working under a co-ordinated programme would all be expected to assemble pre-school children for the purpose of distribution of skimmed milk. The mothers have to be encouraged and persuaded to bring the children regularly to the Centres and the milk should be reconstituted and distributed to the children at the centres. Vitamin supplements issued by the UNICEF can also be conveniently distributed at such centres. If this programme is successfully implemented it should be possible to control the very high incidence of malnutrition present in this group. Wherever possible other protein-rich foods locally available in the community or supplied by other voluntary agencies may also be distributed to the children through the centres with advantage.

Cost of the Programme

It is expected that the skimmed milk and vitamin supplement needed for distribution to the pre-school children would be made available by UNICEF. The distribution of the skimmed milk if undertaken by the Social Welfare Organizations should not entail vast expenditure in the shape of appointment of personnel, etc. It has, however, been calculated that the cost of distribution of one ton of skimmed milk works out to about Rs. 150. On this basis, it should be possible to undertake a limited programme of skimmed milk distribution to pre-school children in the Community Development Blocks with an allocation of Rs. 10 crores in the Third Five Year Plan. It must, however, be mentioned that this programme would only cover a small segment of the pre-school population. It is hoped that with the expansion of pre-primary education, it would be possible to extend this programme in future.

Recommendations

1. School Health Services should be carried out as part of the activities of the existing primary health centres. For this purpose, if possible, the primary health centres should be staffed with one additional Medical Officer and one Auxiliary Nurse-Midwife.

2. To attract medical personnel to work in rural primary health centres, they should be provided with various incentives such as better salary scale, permanency of tenure, free house, suitable arrangements for the education of their children, travelling allowances for their visits to their homes and special recognition of the work carried out in rural areas in the shape of advance increments.

3. For satisfactory discharge of the responsibilities in the school health programme it is necessary to have one whole-time Medical Officer for every 5,000 children. The possibilities of utilising the services of private medical practitioners for school health activities on a part-time basis should be explored.

4. It is necessary to provide suitable incentives in the form of remuneration, allowances, etc., for school teachers to attract the best men for this profession.

5. Teachers should receive adequate instructions in health education during their period of training.

6. Suitable shorter courses for Auxiliary Nurse-Midwife should be instituted so that they will be able to assist the Medical Officer effectively in the school health programme. The syllabus of the Auxiliary Nurse-Midwife training should be revised so as to place sufficient emphasis on school health and health education.

7. To plan, organise, supervise and coordinate school health services programme, school health bureau should be established in all the State Public Health Directorates.

8. It would be desirable to have Coordinating Committees to coordinate the work of the departments of education, health, food. community development, agriculture and social welfare at all levels from the primary panchayat board up to the State level.

9. A thorough medical examination of all pupils must be carried out at the time of their entrance to the primary school and again 4 years later. Where facilities exist, the medical examination should be carried out at more frequent intervals. Parents should be invited to be present during such medical examination so that they may take active interest in the cooperation of any defect that may be found. After medical examination the follow-up work must invariably take place as without this, the medical examination has no meaning.

10. To provide suitable facilities for the treatment of children for common diseases at the primary health centres and in hospitals and also for specialised treatment of children in hospitals when considered necessary.

11. To provide facilities along with first-aid equipments for the treatment of simple ailments of school children like scabies etc., in all the schools by the teachers or the Auxiliary Nurse-Midwife.

12. Provision of facilities for immunisation of children against preventable diseases with special emphasis on compulsory, primary and re-vaccination against small-pox and B.C.G. vaccination.

13. To provide appropriate preventive inoculation during epidemics.

14. Whenever new school buildings are put up to make it compulsory to obtain the advice of public health authorities so that the planning and designing of the buildings will ensure minimum health standard of environmental sanitation.

15. To provide facilities for health education of children as part of the school curriculum.

16. To provide school meals to children as an essential part of the school health programme.

17. The school meal should provide approximately 1/3rd of the total daily requirements of calories, proteins, Vitamin A, Vitamin B complex and calcium in which the home diets of the children are inadequate.

18. School meal should be based as far as possible on locally available nutritious foods. Where possible the inclusion of milk in the school meals should be encouraged. The possibility of producing processed food rich in proteins and other protective elements on a regional basis for incorporation in school meals should be explored.

19. The cost of school meal of reasonable nutritive value will approximately amount to 12 nP. per day per child. Of this 50% will be met by the Government of India and the remaining 50%

by the beneficiaries, community, local bodies, State Governments and other voluntary organisations. It is recommended that primary school children (6-11 years) should be given priority in this programme.

20. Strict hygienic precautions should be observed and enforced in the preparation and distribution of meals to children. The school meal programme may be made use of to impart health education to children on food and hygiene.

21. The raising of kitchen gardens in and around schools to produce vegetables, fruits and pulses for use in school meals should be encouraged. As the junior and senior basic schools have already facilities, a start in this direction should be made in all the schools of this type.

22. The different social welfare organisations particularly women's organisations should be enthused to help in the school meal programme.

23. The nutrition of pre-school child requires even greater attention than that of the school child. The social welfare organisations, such as, Balwadi, Mahila Samiti, etc., the maternity and child welfare centres, and the pre-primary schools of the community development blocks should be utilised for the distribution of milk and other nutritious food to pre-school children.

24. The expenditure on the proposed school health programme will be Rs. 12.47 crores during the Third Plan period. 50% of this will have to be provided by the Centre as assistance to the State Governments to implement the programme.

25. The school feeding programme entails an expenditure of Rs. 144 crores. The Government of India's assistance for implementing the scheme will be Rs. 72 crores approximately and it should be met by the Ministries of Food & Agriculture, Community Development & Co-operation, Education and Health in equal proportion. The remaining half of the expenditure will have to be met by the parents, community, local bodies, voluntary organisation and State Governments.

Appendix B-19

COPY OF THE MADRAS GOVERNMENT (DEPARTMENT OF HEALTH, EDUCATION AND LOCAL ADMINISTRATION) ORDER NO. 1850, DATED THE 8TH NOVEMBER 1957 REGARDING THE SCHEME FOR THE SUPPLY OF SCHOOL MEALS TO PUPILS IN ELEMENTARY SCHOOLS.

Order—No. 1850, Education, dated 8th November, 1957

The Government approve the draft scheme for the supply of school meals for pupils in elementary schools and the draft rules for the payment of grants for the purpose, submitted by the Director of Public Instruction, in his letter cited. The draft scheme and the draft rules are approved subject to certain modifications and copies of the approved scheme and rules are appended to this order.

2. The scheme should be deemed to have come into force from 1st November, 1957. The Director of Public Instruction is requested to issue necessary supplementary instructions to the officers of the Education Department for the organization and administration of the scheme.

* * * *

APPENDIX I

SCHEME FOR THE SUPPLY OF SCHOOL MEALS TO PUPILS IN ELEMENTARY SCHOOLS

1. **Title.**—This scheme shall be called "The scheme for the supply of school meals to pupils in elementary schools".

2. **Date of coming into force.**—The scheme will come into force from 1st November, 1957 or such later date from which the supply of meals to school children is actually started in a centre.

3. **Definition.**—In this scheme the term "Elementary School" means lower or higher elementary school, Junior or Senior basic schools.

4. **Object.**—The object of the scheme is to organize and maintain the supply of school meals to poor pupils reading in elementary schools in the State, with the grants provided by Government and donations offered in cash or kind or in both by the local public.

The supply will be made only on the working days.

NOTE.—The Director of Public Instruction may specify the categories of pupils who should not be deemed to be poor for the purpose of this scheme.

5. **Scope.**—The scheme will extend to all rural and urban areas in the State except the city of Madras, provided that sufficient local support for the scheme is available. I to benefit will extend to poor pupils reading in elementary schools in Standards I to VIII.

6. **Administration of the Scheme.**—The administration of the scheme for the supply of school meals in a centre will be carried on by the local donors who may constitute themselves into two committees to be known as "General Committee", and "Executive Committee" and will be subject to the supervision of the officers of the Education Department.

The unit for the administration of the scheme will be the village or the town concerned. But, if the local public so desire, there may be separate committees for each school or a group of schools in the village or the town.

7. **Constitution of Committees.**—(i) The General Committee may consist of the following, namely :—

(a) All donors who have made either in cash or kind such minimum contribution as may be specified by the Committee.

(b) The General Committee may elect its Chairman and other office bearers and frame rules for transacting its business, fixing the tenure of its membership and the functioning of the Executive Committee.

(ii) The Executive Committee may consist of the following namely :—

(a) The Chairman of the General Committee. He may also be the Chairman of the Executive Committee.

(b) Members elected by the General Committee. The number of members of the Executive Committee may be fixed by the General Committee itself.

(iii) The Executive Committee may, by a resolution authorise either the Chairman or one of its members to be in charge of the money and materials collected and to correspond with the Officers of the Education Department and to receive the grants due from the Government.

(iv) The Headmaster of the school will be the non-member Secretary of the General and Executive Committees. If the Committees be common to more than one school, the particular Headmaster nominated by the Chairman of the Executive Committee will be the Secretary.

(v) The Composition of the Committee prescribed in sub-Rules (i) to (iii) is only suggestive and it is open to the Committees to vary it in any manner to suit the local condition.

8. **Functions of the Committees.**—(i) The General Committee will meet at such interval as it may fix and review the work done.

(ii) The functions of the Executive Committee will be as follows, namely :—

(a) to collect money and things required for the supply of school meals to poor pupils;

(b) to arrange for the preparation and service of meals and for the custody of money and things collected ;

(c) to select the pupils to be provided with meals ;

(d) to appoint the servants necessary for the preparation and service of the meals and to supervise their work ; and

(e) to do all such other acts and things as may be necessary in order to further the object of the scheme.

The Committee may meet as often as may be necessary.

9. **Membership of employees of Government and Local bodies.**—Notwithstanding anything contained in the Government Servants' Conduct Rules, the rules for the personal conduct of officers and servants of Local Bodies and Municipalities and any other rules, employees of Government and Local Boards and Municipalities may work as members of the Committee constituted under this scheme without obtaining the permission of any higher authority. They should not, however, participate in collection of donations.

10. **Recognition.**—All Committees constituted under rule 7 shall apply to the Education Department for recognition. The Deputy Inspector of Schools shall be the authority to recognize the Committees of any centre of school for the purpose of supply of school meals.

11. **Operation of the Scheme**—(a) **Selection of pupils.**—The number of pupils to be provided with school meal will be fixed by the Executive Committee with due regard to its resources. The Executive Committee will select the pupils on the basis of poverty and need of the pupils of the schools concerned, subject to the instructions that may be issued by the Director of Public Instruction with reference to the Note under Rule 4.

(b) **Nature of the meal.**—The meal will ordinarily consist of (1) cooked rice with sambhar or buttermilk or curds and (2) vegetables or pickles. It will be open to the local Committee to provide better fare if it has adequate resources, or to vary the supply according to the local conditions.

(c) **Preparation and service.**—The Executive Committee will make arrangements for preparation and service of the meal in a hygienic manner. This work should not be done on contract basis.

(d) **Expenditure on the Scheme.**—The cost of utensils and any other non-recurring expenditure connected with preparation and service of meals should be entirely borne by the local Committee.

Towards the recurring expenditure on the scheme, Government will give the Executive Committee a grant calculated at the rate of the amount by which actual expenditure exceed 4 nP. per meal per pupil ; or 6 nP. per meal per pupil, whichever is less. The payment of this grant will be subject to such rules and conditions as the Government and the Director of Public Instruction may prescribe from time to time, and may be restricted to such number of pupils as may be fixed by the District Educational Officer.

For the purpose of the grant, the approved recurring expenditure will include the cost of food stuffs, the wages of the cook and the servants employed and the contingencies connected with the preparation and service of food.

(e) **Use of school produce.**—The produce of the school garden or of the land donated to the school may be utilised for the purposes of this scheme and the value of the produce will be treated as receipt for purpose of assessing the net Government grant.

12. **Registers to be maintained.**—The Secretary will maintain the following register :—

(a) A register of members of the General and Executive Committees showing the subscription and donations in cash or kind paid by each member.

(b) Minutes books.

(c) Register of pupils selected for the provision of school meal.

(d) Daily attendance register of the pupils fed.

(e) Cash book for entering the day-to-day receipts and issues.

(f) Such other registers as may be prescribed by the Executive Committee or the Education Department.

The Secretary will issue proper receipts (printed and serially numbered) for the subscriptions received in cash or kind and keep counterfoils of the receipts.

The District Educational Officers concerned will issue necessary supplemental instructions for the proper maintenance of the registers.

13. **Accounts.**—The Chairman or the member authorized under rule 7(iii) will help the Secretary to maintain correct accounts for the money and things received and used. The accounts shall be made available for the scrutiny of the Officers of the Education and other departments.

14. **Returns.**—The Secretary will send to the officers of the Education Department such periodical returns as may be prescribed by them.

15. **Schools in Kanyakumari district and under Government department.**—This scheme will not apply to such elementary schools as are managed by the Government departments and have already provision for the supply of school meal to their pupils entirely at Government cost, and to schools in the Kanyakumari Educational district including Shencottah taluk where the existing system of school meals will continue for the present.

16. **Amendment of alternation of the Scheme.**—The District Educational Officer may, with the previous approval of the Director of Public Instruction, amend or alter this scheme to suit local conditions in respect of any centre.

APPENDIX II

RULES FOR THE PAYMENT OF GRANT TOWARDS THE SUPPLY OF SCHOOL MEALS TO PUPILS IN ELEMENTARY SCHOOLS

1. **Title.**—The rules may be called "The Rules for the payment of grant towards the supply of school meals to pupils in elementary schools".

2. **Definition.**—In these rules—

(a) The term 'Elementary School' means lower or higher elementary school, junior or senior basic school, recongnized under the rules framed under the Madras Elementary Education Act.

(b) The term "Executive Committee" means the committee recognized by the Deputy Inspector of Schools concerned under the scheme for the supply of school meals to pupils in elementary schools.

(c) The term 'Chairman of the Executive Committee' includes the person authorized by the Committee to receive the grant.

3. **Amount and rate of grant.**—With effect from 1st November, 1957 or such later date as may be fixed by the District Educational Officer, the Executive Committee or every school meal centre may be paid a grant calculated at the rate of the amount equal to the amount by which actual expenditure exceeds 4 nP. per meal per pupil ; or 6 nP. per meal per pupil whichever is less.

4. **Sanctioning authority.**—The District Educational Officer shall be the authority to sanction the grant under these rules.

5. **To whom payable.**—The grant shall be paid to the Chairman of the Executive Committee. The District Educational Officer, shall draw the grant in the bill prescribed for the drawal of teaching grants of aided elementary schools and endorse it for payment to the authorized person. Alternatively in case of remote places, if the Chairman so desires, the District Educational Officer may remit the grant by money order, the money order commission deducted from the grant amount due.

6. **Procedure for sanction of grant.**—(a) The grant may be sanctioned in advance for each quarter. For the purpose of this rule, the quarter will cover a period of three months ending with 31st March, 30th June, 30th September and 31st December.

(b) The Chairman of the Executive Committee shall apply to the Deputy Inspector of Schools concerned for the quarterly advance grant, giving the number of working days during the quarter, the number of pupils selected for the provision of the school meal and his estimate of the Government grant due for the purpose. The Deputy Inspector shall scrutinize the particulars with reference to the number of pupils, if any fixed by the District Educational Officer, and recommend the payment of the advance at the rate specified in rule 3. On receipt of this recommendation the District Educational Officer shall sanction the grant.

(c) The grant paid in advance for a quarter shall be adjusted before sanctioning the grant for the succeeding quarter.

7. **Monthly Return.**—A monthly return in such form as may be prescribed by the District Educational Officer, shall be furnished by the Chairman of the Executive Committee to the Deputy Inspector of Schools concerned. It shall contain information regarding the grant received in advance for the quarter, the amount adjusted upto the end of the month, the number of pupils fed during the month, the grant payable, etc. The return shall also be signed by the Headmaster/Headmasters of the School(s) concerned.

8. **Debit head of account.**—The grant sanctioned under these rules shall be debited to the budget head "37—Educations Miscellaneous—C. Schemes under Second Five-Year Plan-11 Grants for school meals to elementary school pupils".

9. **Recognition of school meal centres, and order of priority.**—The centres will be recognized in the following orders of priority :—

(i) All the private school-meal centres which are in existence on the date of issue of this order.

(ii) New centres opened thereafter in Block Development and National Extension Service areas.

(iii) Other centres opened thereafter with special prior permission of the Director of Public Instruction.

Appendix B-20

A PLAN FOR STARTING SCHEMES OF TRAINING AND PSYCHIATRIC SERVICES ON A PILOT SCALE.

Mental Health

The following are the preventive mental health projects of a pilot type which can be undertaken at a small cost.

	Cost for 1 year	Cost for 5 years
	Rs.	Rs.
Orientation and training in the subject of Mental Health for all Medical and Public Health Personnel, namely :		
(a) General Practitioners, & Specialists, (b) Paediatricians, (c) Public Health Personnel. *Ad hoc* grants of Rs. 4,000 p.a. to mental health societies or mental health institutes or other suitable agency willing and able to provide such mental health training orientation	4,000	20,000
Mental Health Services at Pre-primary, Primary and Secondary Schools, Training and Employment of School Counsellors, Child Guidance Clinics and Mental Health Services at Colleges :		
(a) Mental Health Services for schools—Pilot Project	11,000	55,000
(b) Training and employment of school counsellors	10,000	50,000
(c) Mental Health services at colleges	11,500	57,500
Ad hoc grants to mental health societies and institutes willing and able to provide such mental health services and training.		
Courses on "Preparation for Marriage", Pre-marital Counselling and Marriage Guidance	15,000	75,000
Ad hoc grant of Rs. 15,000 p.a. to mental health societies or mental health institutes or other suitable agency willing and able to provide such premarital education and counselling and marriage guidance.		
Training of Psychistric & Mental Health Personnel :		
(a) Training of Psychiatrists.—Stipends should be provided by States Governments in respect of deputation of one or two medical officers in Government service or other doctors for undergoing a 2 years training course for the D.P.M.		
(b) Training of Child Psychiatrists—Strengthening of existing institution which provides such training on small scale by *ad hoc* grants	10,000	50,000
Mental Health orientation of various professional groups :		
Mental Health orientation of General Practitioners and Specialists, Paediatricians and Public Health doctors and nurses has already been referred to above.		
Public Education in Mental Health	10,000	50,000
TOTAL	71,500	3,57,500

Appendix B-21

IMMUNIZATION SCHEDULE RECOMMENDED FOR THE SOUTH-EAST ASIA REGION BY THE W.H.O.

1st *visit* :—

1. B.C.G. vaccination : birth—4 weeks.

2. Smallpox vaccination : 3-9 months.
3. Diphtheria-pertussis-tetanus (triple vaccine with alum) : 2 doses at interval of one month.

2nd and 3rd visits.—

The first injection could be given at the time of smallpox vaccination. Smallpox vaccination is verified at the second visit. Failures of smallpox vaccination are re-vaccinated.

4th and 5th visits.—

4. Diphtheria/tetanus booster : school-entry or soon thereafter.
5. T.A.B. vaccination : school-entry or soon thereafter ; 2 doses at interval of one month.
6. Smallpox re-vaccination : school-entry or soon thereafter (at the time of second TAB injection).

6th and 7th visits.—

7. B.C.G. re-vaccination : 10-14 years (in tuberculin negative reactors).
8. Smallpox re-vaccination : 10-14 years.
9. TAB booster : 10-14 years.

Appendix B-22

EXPLANATORY NOTE REGARDING INTEGRATION OF MASS BCG VACCINATION IN THE DISTRICT TUBERCULOSIS CONTROL PROGRAMME

1. The present situation of the Mass B.C.G. Campaign :

When the Mass B.C.G. Campaign was started in India in 1951, it was generally understood that this campaign was to be a one time measure to cover the whole of the susceptible population once and for all. When the original target of covering the population within the first five year plan was not achieved it was decided to continue the campaign in the second plan. By the beginning of the third five year plan a very large majority of the young population of India have been covered once, and a considerable proportion of the school population have been covered more than once.

At this stage of development it appears logical to discuss the forms under which B.C.G. Vaccination should be continued. There is no doubt that, although a considerable amount of work is still being carried out, the campaign has lost its initial momentum and also that some of the arguments for organising Mass B.C.G. as a specialised campaign no longer have the same compelling urgency as they had in 1951. One factor of particular importance in this respect is the decision of the Government of India to implement a

National Tuberculosis Programme based upon the development of District Tuberculosis Programmes from District Tuberculosis Centres.

2. The development of District Tuberculosis Control Programme:

The Government of India have decided to launch, on a national basis, a tuberculosis control programme to be based on a tuberculosis centre in each of the 380 districts. The Government have now the assistance of the World Health Organisation and the United Nations Children's Fund in certain aspects of this National Programme. The first phase comprise the establishment of the National TB Institute with facilities for training of key personnel for the programme and for development of nationally applicable controlled methods. During this phase the Central Government would also, together with respective State Governments, establish 20 TB District Centres equipped with x-ray and laboratory facilities by UNICEF. The second phase comprises the establishment of another 40 District TB Centres. It is expected that, pending the successful development of these first 60 centres using the methods developed in the NTI and with key personnel trained in the NTI further district centres will be established until each district has its district centre and a district tuberculosis control programme.

3. The place of Mass B.C.G. Vaccination in the District Control Programme:

It appears reasonable that all the tuberculosis control activities in a district should come under the administration of the district tuberculosis centres as they develop according to the above described plans and B.C.G. vaccination should have a very important role to play in the control programme both in its own right and through the tuberculin testing associated with it in the development of case finding and treatment programme.

There appear to be 3 main functions of B.C.G. vaccination in the district tuberculosis programme.

(a) Tuberculin testing and B.C.G. vaccination. This, if to be most effective, has to be on a house-to-house basis gradually covering the entire district; in this it is desirable to restrict to young people; specially below 15 years.

(b) Tuberculin test in the above programme will be used as a first screening for referring high prevelence group for further diagnosis by x-ray and/or sputum examination; and for giving treatment to high grade reactors in the lower age groups or others selected for the purpose.

(c) The use of both the above programmes for health education which would gradually involve all the villages of the district.

4. Some points of justification for integrating B.C.G. in the District Control Programme:

(a) As the Mass B.C.G. Vaccination works now it is doing a considerable amount of spread of information about tuberculosis and its control, but as soon as the team leaves the spot there seems to be a vacuum and the increased awareness is not utilised to the best advantage for purpose of tuberculosis control.

(b) B.C.G. Vaccination teams can be an important field arm for the tuberculosis centre which can bring information about the programme directly to the villages. In this they have to co-operate with the general health services the contact of which with the remote village is rather unsatisfactory at present from this point of view.

(c) The quality of the work of the Mass B.C.G. Campaign at present is not fully satisfactory. It seems reasonable to assume that the deterioration of the quality of work may, among other things, be associated with the lack of security of service among the personnel. This could presumably be considerably altered if the B.C.G. technicians were to work with a town as their base to which they could often return. Their work would also have a far more varied content when the technicians, in addition to their previous duties, also associate with case-finding and health education work etc.

(d) Finally, it appears justified to assume that the quality of all the tuberculosis control work could also be improved by the fact that the largely public health oriented B.C.G. workers work together with the case-finding and treatment workers whose background may be clinics. One could imagine in the long run that new categories of technicians could be developed when people with B.C.G. technician background are entrusted with duties as treatment organizers and liaison workers between the tuberculosis service and the peripheral general health services.

5. Phasing:

It is essential that the present Mass B.C.G. Campaign should not be jeopardised by these integration policies. The staff of the Mass B.C.G. Campaign should only be transferred to work with the district tuberculosis centres as these become established with personnel trained in the NTI. It would appear that the number of technicians needed for each district centres would be 6+1 medical or non-medical supervisor. This supervisor should be trained in the NTI in the new type of B.C.G. programme and its integration with other tuberculosis control activities.

There are altogether approximately 12,000 B.C.G. Technicians in the various States and this number should, therefore, not be curtailed until 200 district centres have been established. The establishment of 200 district centres will probably take the better part of the

Third Five Year Plan and the existing Mass B.C.G. Campaign cannot, therefore, be finally wound up till 1965.

Appendix B-23

A NOTE ON THE STAFFING PATTERN OF DISTRICT TUBERCULOSIS CLINICS.

Under the National T.B. Control Programme launched during the 2nd 5-year Plan the scheme for the establishment of T.B. clinics was given high priority and to begin with, it was proposed to establish 200 new T.B. clinics and upgrade 100 of the existing ones with central assistance, with the ultimate object of establishing one TB clinic in each District with a population of 1 million. Subsequently the target was reduced to 180 in view of the slow implementation of the scheme by the States, the shortage of trained personnel and foreign exchange difficulties. Under the scheme, the Central Government agreed to subsidise the State Governments in the establishment/upgrading of TB clinics by providing x-ray and laboratory equipment worth Rs. 50,000 to each TB clinic. The equipment was to be supplied after the State Governments had provided adequate buildings with electric and water supply connections and posted the following staff :—

1. T.B. Officer	1
2. Assistant Doctors	2
3. Health Visitors	4 to 5
4. Dispenser	1
5. X-ray Technician	1
6. Laboratory Technicians	2
7. Clerks	2
8. Statistical Clerk	1
9. Class IV servants	5 to 6

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It may, however, be stated that at the meeting of the TB sub-Committee of the Central Council of Health held in Bombay on 19/20th March 1961, it was explained that there was no compulsion to adopt strictly the type of plans for clinics furnished by the DGHS for the convenience of the States. It was recommended that what was needed was the minimum accommodation necessary for the efficient functioning of a clinic with adequate electric current and water supply. The building should have rooms for x-ray, for laboratory, for Doctors and Health Visitors and a waiting hall. If these are available in existing building there was no need to put new buildings. It was also pointed out that no clinics could function properly without *one doctor, one health visitor, one x-ray technician, one laboratory technician and one B.C.G. Team,* and these were the absolute minimum requirements that were required before the State Government could expect the supply of costly equipment to the clinics. The intention of including B.C.G. team within the minimum complement of staff of TB clinics as recommended by the TB Sub-Committee was that it is ultimately proposed to integrate the B.C.G. Vaccination with the normal public health programme of the States by the end of the Third Plan period.

In view of the particular type of work which the District Clinic is expected to undertake, especially from the point of view of the community control of T.B., special training for this purpose is planned to be imparted at the National TB Institute. A comprehensive training has been planned for at the National TB Institute and it was recommended that all the State Governments should depute as many of their key personnel meant to work in their TB clinics especially those receiving Central/UNICEF aid, for training at the National Tuberculosis Institute.

Appendix B-24

STATEWISE DISTRIBUTION OF ENDEMIC POPULATION (LEPROSY) IN URBAN, RURAL AND HILLY AREAS.

	Endemic Population in Thousands					
	Plains					Hilly
	Urban	Rural				
		Grouped according to incidence per 1000.				
		Between 5 to 20	Between 21 to 30	Between 31 to 40	Over 40	
1. Andhra	4,464	13,756	1,448	1,295	1,358	..
2. Assam	1,346	5,382	..	..	..	1,849
3. Bihar	4,845	17,523	1,858	..	..	..
4. Bombay	8,023	18,314	..	..	1,792	..
5. Madhya Pradesh	4,727	6,907	..	..	..	..
6. Madras	6,900	13,559	1,483	2,287	4,608	..
7. Mysore	2,018	6,933	1,139	..	..	..
8. Kerala	2,703	6,583	2,950	..	1,276	..
9. Orissa	2,438	8,736	..	..	1,016	..
10. Uttar Pradesh	4,247	16,987	..	..	..	2,110
11. West Bengal	4,749	5,445	12,495	1,055	..	718
12. Himachal Pradesh	98	301	..	92	..	492
TOTAL (in thousands)	43,558	120,426	21,373	4,729	10,050	5,169
TOTAL (in millions)	44	120	21	5	10	5

TOTAL endemic population: 205 millions.

Appendix B-25

ESTIMATED INCIDENCE OF LEPROSY IN INDIA (BASED ON THE FIGURES AVAILABLE BY END OF 1955)

State	1951 Census population (in lakhs)	Districts		Incidence per thousand reported by			†Working Incidence
		Total	Endemic*	Foundation's control Centres	Govt. Subsidiary Centres	State Leprosy Officer	
1. Andhra . . .	313	19	14	37	5 to 67	..	10
2. Assam . . .	90	11	10	..	8	..	8
3. Bihar . . .	38	17	10	34	4 to 21	..	7
4. Bombay . . .	43	43	23	23	5 to 63	2 to 20	5
5. Himachal Pradesh .	11	5	4	..	8	8 to 18	10
6. Madhya Pradesh . .	261	43	11	..	1 to 9	1 to 10	3
7. Madras . . .	300	13	8	43	7 to 55	10 to 40	20
8. Mysore . . .	194	19	8	18	4 to 29	2 to 15	3
9. Orissa . . .	146	13	9	19	11 to 75	5 to 20	10
10. Kerala . . .	135	9	9	21	40	10 to 25	15
11. Uttar Pradesh . .	632	51	19	13	6 to 20	More than 5 in 32 Dist.	4
12. West Bengal . .	263	16	14	19	22	10 to 50	20
13. Punjab . . .	161	21	1	..	..	3 to 12	1
14. Rajasthan . . .	160	26	..	..	..	..	1
15. Tripura & Manipur .	12	..	..	..	3 to 10	..	5
TOTAL . . .	2,759	306	140	227			

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NOTES :

*Districts having an incidence over 5 per thousand have been taken as 'endemic districts'.

†The Working incidence has been evolved after taking into consideration the figures of incidence from three major sources (surveys conducted by Gandhi Memorrial Leprosy Foundation, Government Subsidiary Centres and Belgian Laprosy Centre and figures reported by State Leprosy Officers).

Appendix B-26

NUMBER OF DOCTORS SO FAR AWARDED SCHOLARSHIPS OR FELLOWSHIPS BY THE GOVERNMENT OF INDIA CONJOINTLY WITH INTERNATIONAL ORGANISATIONS AND THE SUBJECTS THEY SPECIALISED IN.

Subject	Rockefellers	W.H.O.	T.C.M.	Colombo Plan	Ministry of Health	Nuffield	UNTAA	Total
1	2	3	4	5	6	7	8	9
Anatomy	12	4	..	..	4	..	..	20
Anasthesiology	1	1	..	5	5	..	..	12
Bacteriology	1	9	..	6	2	..	..	18
Biochemistry	8	2	..	1	4	..	..	15
Biology	3	1	..	..	1	..	..	5
Biophysics	1	..	..	1	..	..	..	2
Cardiology	2	..	..	..	..	..	..	2
Dietetics	1	..	..	..	..	..	..	1
Entomology	3	1	..	1	..	..	..	5
Epidemiology	1	1	..	..	3	..	..	5
Hematology	2	..	..	..	..	..	..	2
Histopathology	1	..	..	2	..	..	..	3
Hosp. Admn.	2	3	..	..	..	..	..	5
Industrial Hygiene	1	3	3	1	4	..	..	12
Library Science	1	..	..	..	..	..	..	1
Malarialogy	2	13	2	..	1	..	..	18
Medicine	2	..	..	6	12	3	..	23
Med. Social work	1	..	..	..	..	..	..	1
Medical Care	1	..	..	..	..	..	..	1
Medical Education	2	5	49	1	1	..	..	58
Microbiology	1	..	..	1	..	..	..	2
Nursing	14	31	18	54	..	..	..	117
Nutrition	1	3	..	3	5	..	..	12
Obstetrics	2	1	.	8	14	..	..	25
Pathology	7	2	..	10	8	..	..	27
Pediatrics	5	10	.	2	2	..	..	19
Pharmocology	7	4	.	4	4	..	..	19
Physiology	6	2	..	6	3	..	..	17
Population	1	..	..	..	..	..	..	1
Preventive Medicine	5	13	..	..	..	..	..	18
Psychiatry	2	..	..	4	4	..	..	10
Public Health	18	27	31	9	5	..	..	90
Radiology	1	1	..	4	7	..	..	13
Radiophysics	1	..	.	..	..	..	..	1
Record Library	1	..	..	..	..	..	..	1
Sanitary Engineering	4	12		1	1	..	..	26

Subject	Rocke fellers	W.H. O.	T.C. M.	Colombo Plan	Minis-try of Health	Nuf-field	UN-TAA	Total
1	2	3	4	5	6	7	8	9
Statistics	3	11	..	..	1	..	..	15
Surgery	7	1	..	11	29	..	..	48
Virology	3	..	..	..	..	..	..	3
Antibiotics	..	9	..	..	..	..	..	9
Yellow Fever Quarantine	..	1	..	..	..	..	..	1
Mental Health	..	3	..	..	..	..	..	3
Tuberculosis	..	20	..	..	4	..	..	24
Venereal Diseases	..	5	..	8	4	..	..	17
M.C.H.	..	11	..	..	6	..	..	17
Cancer	..	1	..	..	..	..	..	1
Rehabilitation	..	3	..	1	..	..	2	6
Leprosy	..	4	..	1	..	..	..	5
Dentistry	..	4	..	4	18	..	..	26
Medical Research	..	2	3	..	..	..	..	5
Laboratory	..	1	..	..	..	..	..	1
Yaws Control	..	6	..	..	..	..	..	6
En. Sanitation	..	7	..	..	..	..	..	7
Midwifery	..	1	..	..	..	..	..	1
Physiotherapy	..	2	..	1	..	..	1	4
Hospital Physics	..	1	..	..	..	..	..	1
Trachoma	..	1	..	..	..	..	..	1
Insecticidal Resistence	..	1	..	..	..	..	..	1
Health Education	..	10	10	1	..	..	..	21
Miscellaneous	..	..	12	..	..	..	..	12
Clinical Psychology & Guidance	..	..	..	1	..	..	..	1
Drugs Standardisation	..	..	..	1	..	..	..	1
Flariacis	..	..	..	1	..	..	..	1
Manufacture of vaccine	..	..	..	1	..	..	..	1
Plague	..	..	..	1	..	..	..	1
Chest Diseases	..	..	..	1	..	..	..	1
Opthalmology	..	..	..	1	5	..	..	6
E.N.T.	..	..	..	1	..	..	..	1
Orthopaedics	..	..	..	1	..	..	..	1
Pharmaceutics	..	..	..	..	1	..	..	1
Durgs analysis	..	..	..	..	1	..	..	1
Chemistry	..	..	..	..	1	..	..	1
Serology	..	..	..	..	1	..	..	1
Neurology	..	..	..	..	1	..	..	1
	137	254*	136	166	162	3	3	861

Remarks : *The subject-wise classification of the remaining 14 fellowships/scholarships is not available.

Appendix B-27

EXTRACT FROM THE NOTE ON MAN POWER REQUIREMENTS PREPARED BY THE MINISTRY OF HEALTH.

The Ministry of Health have estimated that 651,000 doctors may be taken to be the effective strength in 1956. Allowing for attrition due to death, retirement, etc., at the rate of 2.4% the number of active doctors in the succeeding quinquennia based on the 1956 cohort will be as follows :

1961	56,941
1966	47,883
1971	39,144
1976	30,405
1981	22,274

Assuming an average figure of turnover of 3,000 doctors per annum during the II Plan and 4,000 in the III Plan, the number of doctors actually in practice in the period 1961 to 1981 will be :

1961	71,941
1966	82,883
1971	99,144
1976	115,405
1981	132,274

Against the anticipated strength of doctors as projected above the doctor-population ratio will be :

1961	1 : 5988
1966	1 : 5787
1971	1 : 5324
1976	1 : 4912
1981	1 : 4622

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The possibility of achieving the target of one doctor for 1000 population seems to be very remote in the light of the extraordinary rise in population, possible increase in the training potential and other conditions.

Apart from the criterion of doctor-population ratio, another yardstick that will have to be used is the number of doctors likely to be required for the development schemes in the succeeding five-year plans. The following projections may therefore be useful for the purpose :

III Plan—

Primary Health Centres	3,200
Teachers	2,500
Medical Relief	5,000
Total III Plan requirement	10,700
Total production to be aimed at	20,000

IV Plan—

Primary Health Centres	5,000
Teachers	2,000
Medical Relief	10,000
Total IV Plan requirement	17,000
Total production to be aimed at	24,000

V Plan—

Primary Health Centres	15,000
Teachers	2,000
Medical Relief	10,000
Total V Plan requirement	27,000
Total production to be aimed at	25,000

If it were to be assumed that the entire turnover of the medical colleges would be available for utilisation in the health services, the production of doctors in the III, IV and V Plans would be higher than would be required for these services but will fall short of the requirements of the V Plan. In practice, however, it would not be reasonable to assume that, short of conscription, more than a certain proportion of the outturn of doctors would be available for manning health services. Possibly not more than 30% of the total manpower of medical men are employed in health services. Even assuming that 50% of the production would be so available in future, the production would have to be :

III Plan	23,200
IV Plan	34,000
V Plan	54,000

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As against this the actual strength of doctors and the production of new ones will add up to :

	Production	Total strength
III Plan	20,000	82,883
IV Plan	24,000	99,144
V Plan	25,000	115,405

As a logical conclusion, it would appear to be necessary to increase the admissions to medical colleges by at least 1,000 during the III and IV Plan periods.

It has often been urged that in order to meet the situation where production hardly keeps pace with requirements, conscription of doctors for the service of Government would be justified. The question is whether the medical profession should be singled out for this purpose. One suggestion is that all entrants to medical colleges should enter into an agreement to serve Government for a specified number of years. This will involve the grant of stipends to students as a *quid pro quo*. Another suggestion is that medical men and women should serve in rural areas also and for this they will have to be given increased salaries, increased amenities etc. The age of superannuation will have to be increased. It will be necessary to increase the post-graduate medical education facilities in order to meet the problem of adequate number of teachers, specialists, etc.

Appendix B-28

REPORT OF THE EXPERT COMMITTEE APPOINTED BY PRESIDENT OF INDIA TO EXAMINE THE HIGH COST OF MEDICAL EDUCATION.

Introduction :

India needs many more doctors during the next ten years, for which new medical colleges must be started. In addition to the 61 Medical Colleges already existing, another 10-15 Medical Colleges will have to be established during the 3rd Five Year Plan. The Estimates Committee of Parliament had commented that the cost of buildings, equipment, etc., of Medical Colleges started during the last few years was very high, and that economy should be effected by construction of cheaper buildings and by the use of only essential equipments. The cost of Medical education from the point of view of the students has also been considered high in many quarters. In the 3rd Five Year Plan out of 11 thousand crores, only about 300 crores have been provided for Health, and it may not be possible to start 10-15 new Medical Colleges which are estimated to be the minimum required, if the cost remains as high as at present. The conference of Principals/Deans of Medical Colleges, which was held in New Delhi in September, 1960, while examining the high cost of Medical Education in the country, recommended that economy could be effected in equipment and in the construction of buildings for Medical Colleges. In pursuance of this recommendation the President of India was pleased to appoint a committee with the following members to go into the question of the high cost of Medical Education and advise the Government of India as regards possible methods of economy in the construction of buildings as well as equipments for Medical Colleges :—

1.	Col. B. N. Hajra, Principal, Bankura Sammilani Medical College, Bankura. .	Chairman
2.	Major K. N. Rao, Director of Medical Services, Andhra Pradesh, Hyderabad. .	Member
3.	Dr. K. C. Sarbadhikari, Principal, Medical College, Calcutta. .	Member

4.	Dr. P. M. Bhandarkar, Dean, Medical College, Aurangabad.	Member
5.	Dr. P. N. Wahi, Principal, S. N. Medical College, Agra.	Member
6.	Dr. S. S. Anand, Principal, Medical College, Amritsar.	Member
7.	Dr. N. Jungalwalla, Deputy Director General of Health Services, New Delhi.	Member Secretary

In our report the high cost of Medical education has been examined in almost all aspects and the recommendations made always keeping in mind that efficiency is not impaired in any way. Some of us visited Medical Institutions where low cost buildings were being actually used.

Future likely trends:

A Medical College need not always be built actually within the city limits where the cost of land is usually high. Given the requisite necessities, namely electric supply, water, and good roads, new Medical Colleges could perhaps be started in rural surroundings, where a campus of about 150 acres for accommodating the college and the hospital, would be available with comparative ease. A locality within 2 or 3 miles of the chief city is considered by many as ideal. With regard to the structure of the buildings a building that would last for 200 years or more is not insisted upon at present in many quarters. There is a tendency in some parts of the world, for colleges to use multi-discipline laboratories. This could be adapted with modifications, to suit the requirements of our country. There are instances of medical colleges where separate lecture theatres and laboratories for Anatomy, Physiology, Pathology and Pharmacology are housed in wholly separate buildings. This tendency is being modified on economic grounds. In the teaching of basic medical sciences of Anatomy and Physiology, the tendency is to reduce the number of working hours, following the example of Harvard, (U.S.A.), and Russia.

Medical research today forms an integral part of every Medical College and course. The facilities available are limited in many institutions, but it should be possible to work out co-ordinated spheres of development, so that waste is avoided and maximum use made of resources.

Review of existing position:

A review of the position regarding cost of construction of some medical colleges during the last few years indicates the extent of expenditure on buildings alone (*vide* Appendix 'A'). In no case was the cost less than Rs. 15 per sq. ft. Such buildings usually have a life expectancy of about 200 years. With the constant increase in prices of material, it is likely that the cost of construction will increase in the succeeding years. The time for completion of construction of such permanent structures is usually long in view of the scarcity or non-availability of materials as and when required.

A Sub-Committee of Principals'/Deans' Conference held in September, 1960, was of the view that there was scope for economy in construction by utility type of construction. However, some members are of the opinion that good buildings and surroundings were a definite stimulus to intellectual growth and to the morals of students, who are required to spend a fair part of their student life in such surroundings.

Ways and means of affecting economy :

The Committee has based its recommendations on a Medical College with 100 annual admissions.

The Committee also agreed that it would essentially confine its attention to the costs regarding facilities for under-graduate medical education which would include the research aspects associated with such institutions. While the Committee agreed that many of such institutions would be required to undertake responsibilities for post-graduate medical education, in the course of development, it was felt that it was not possible to consider this matter in detail.

The Committee has left out of consideration the cost of land, which, though very important, was subject to wide variation.

(a) **Buildings.**—Cheaper types of construction have been used in at least two of the Medical Colleges in India, *viz.*, at Bankura and Warangal. Thirty feet and forty-four feet span structures supplied in bays of 13′-4″ designed for a wind velocity of 75 miles per hour, or in 10 feet bays for a wind velocity of 100 miles per hour, have been used in the Bankura Sammilani Medical College. These structures made of tubular steel are robust but light, making it easy to handle, transport and erect. They have been used for lecture theatres, Pathology departments, Operation theatres, (which can be air-conditioned), Wards Labour Rooms, Sanitary annexes, Animal room, etc. The maintenance cost has so far been small. With false thick cardboard or wooden ceilings, they are stated to be reasonably comfortable during the hot season. Thermocoustic multipurpose light-weight insulation boards may be used in the ceilings, and the rooms can be air-conditioned if so desired.

The cost of construction in Bankura and Warangal Medical Colleges has been Rs. 8 per sq. ft. At Warangal a representative of the Committee examined some of these cheaper types of buildings which were under construction. The Superintending and Executive Engineers who were incharge of construction explained that the life of these structures would not be less than 100 years with very little maintenance cost. At Warangal the Principal felt satisfied that all the requirements regarding accommodation of a Medical College could be met. At Bankura these structures have withstood a number of severe storms and nor'-westers. These buildings are not as imposing as permanent structures built on traditional lines, but they seem to have served the purposes of a medical college without loss of efficiency.

It is considered that a Medical College with an annual admission of 100 students would require a minimum of one hundred and ten thousand square feet for buildings, excluding structures like auditorium or Clinical Lecture Theatres and Demonstration rooms. This includes the departments for pre-professional, pre-clinical, para-clinical as well as the departments for experimental and research work in medicine, survey and obstetrics and gynaecology administration block and examination hall (*See* Appendix B).

The effective saving in pre-fabricated structures would be about Rs. 7 per sq. ft. Considering the developments in science and particularly in medicine, there should be a certain flexibility to permit of changes and alterations in the structure of the building and the objective of ensuring that a building should last for 200 or 300 years is not entirely satisfactory, and should not be the main criteria. Pre-fabricated roofing structures can be expanded at will and at a low additional cost. In cities, where the question of availability of land at a reasonable rate is a problem multi-storyed permanent structures are necessary and inescapable. In rural areas and at places, 2 to 3 miles outside the limits of big cities, single-storyed buildings (pre-fabricated structures) have become a practical proposition with definite reduction in cost.

With regard to hostel for students and staff quarters for construction with pre-fabricated materials as mentioned above, the estimated cost would be about Rs. 15 lacs.

It is usual to have separate accommodation for each department (pre-clinical, para-clinical and clinical) in most of the existing medical colleges. There is ample scope for some departments to share Lecture Theatres and Laboratories. We, therefore, recommend that maximum utilization should be made of laboratories and class rooms in Medical Colleges by sharing some of the rooms and laboratories by more than one department.

We give below some examples of departments where certain facilities could be shared :—

Common Lecture and Laboratory space between the following departments :

(1) Biology, Anatomy, Histology and Experimental Surgery.
(2) Physiology, Pharmacology and experimental medicine.
(3) Pathology, Bacteriology and Forensic medicine.
(4) Chemistry and Biochemistry.
(5) Physics and English.

A single laboratory for Histology, and Histopathology could be considered.

Experimental laboratories for medicine, surgery and Obstetrics and Gynacology may be located in a separate building with sharing of certain facilities such as Biochemistry, operation theatres, radiology, etc.

The Committee was also of opinion that for the construction of such an integrated experimental unit a sum of Rs. 80,000 would be adequate with proper planning and use of common services instead of Rs. 3 lacs as estimated by the sub-committee of the Conference of Deans and Principals of Medical Colleges. (*See* Appendix C).

(b) **Staff.**—The Committee discussed the possibilities of reorganization of departments without losing efficiency. It had previously been the practice for clinical staff to be associated with certain preclinical departments, for example, Professors of Medicine were often associated with the departments of Physiology and Teachers of Surgery were associated with the departments of Anatomy. The Committee felt that increasing use of this principle including such subjects as Pharmacology, Biochemistry etc. could usefully be adopted. While this may not, to any appreciable extent, reduce the actual cost on staff, the committee felt that this would make for increasing efficiency and integration, correlation and coordination of teaching. It would also save using medical personnel for non-clinical subjects and also permit the maximum use of non-medical scientists in the medical curriculum.

Hospital Staff :

The Committee discussed the question of schools of basic medical sciences and the utilization of larger district hospitals for teaching purposes. The Committee felt that the utilization of a double shift system in the basic medical sciences would need and adequate supply of trained teachers to undertake the increased load and it was somewhat doubtful whether teachers in such numbers would be actually available in the country to permit this. The separation of schools of basic medical sciences and the clinical units would make it difficult to provide an integrated undergraduate teaching curriculum.

It was pointed out that hospitals attached to medical colleges in various countries were distinct from hospitals providing medical relief for the community. It was, therefore, felt that teaching hospitals for practical purposes be distinct from the usual district and other type of hospitals where medical relief was provided. It would not be possible to restrict admissions in the teaching units to cases having teaching value only. It was, however, agreed that wherever possible, teaching beds/units should be differentiated from those providing medical relief.

The Committee, therefore, recommends that in order that the teaching hospital should also be able to render medical relief, additional staff should be provided so that the teachers could devote most of their time to teaching and research. It is desirable that the Head of the Medical College should be in overall charge of both the College and the Hospital.

The Committee also discussed the question of the utilization of services of honorary staff members in order to meet the deficiencies in existing teaching cadres. The Committee wish to emphasize that such honorary staff members should be adequately qualified and possess the necessary qualifications and experience as required by the Universities for full time staff members.

In addition, the Committee felt that maximum utilization should be made of non-medical personnel as is being increasingly done in teaching institutions in many parts of the world. The Committee noted with satisfaction that the Indian Medical Council had modified their requirements of medical staff members for the teaching of Biochemistry in medical colleges.

The Committee, therefore, recommends that every effort should be made to utilize the services of non-medical scientists *e.g.*, Biochemists, Bio-physicists and Statisticians etc., who need not be medical graduates, in the medical colleges.

(c) **Equipment.**—The purchase of expensive equipment adds considerably to the cost of medical education. It was felt that considerable economy could be exercised in this matter through the pooling of expensive apparatus required by many departments in one place.

The Committee recommended that special and expensive apparatus should not be duplicated but should be centralized. The Principal should be to supply each department equipment required for use daily or very frequently and to pool all other equipment required for an occasional demonstration or research in the Central research laboratory so that it would be available to other departments and greater use made of the equipment. This is by no means comprehensive but given as an example of economy by avoiding reduplication.

Although a large amount of money was being spent for procuring costly equipment, the maintenance facilities for such equipment were inadequate, and the present arrangements by which the selling agents also arranged for the maintenance of such equipment were usually unsatisfactory and led to costly equipment remaining unused for long periods of time. The Committee, therefore, felt that in view of the capital investment in equipment, it would be highly desirable to have workshops suitably located to serve a number of medical colleges in an area.

In this connection, the Committee also noted that there was considerable variation in the various colleges and hospitals regarding request for foreign currency for the import of equipment and supplies.

The Committee recommended that a standard list of equipment which it is desirable to import, should be prepared along the lines of standard equipment for medical institutions in order that maximum utilization be made of foreign currency and also to provide standard equipment whose maintenance would not create too many problems.

As regards import of equipment and supplies, it is hoped that with the continued expansion of schemes for manufacturing these instruments locally, in some cases with co-operation of foreign firms or foreign governments, the standard list of equipment which it is considered desirable to import will gradually diminish. At the same time, for precision work, there should be a certain amount of foreign exchange available.

With reference to the recommendation of the Sub-Committee of Principals/Deans, regarding the integrated research unit building and equipment, the Committee agreed that Rs. 3 lakhs would be sufficient for purchase of equipment for Central Research Unit. For laboratory tables, furniture and ancilliary services, for the unit, the cost should be Rs. 1 lakh. (*See* Appendix C).

Library:

The Committee recommended that in *cities where there is more than one medical college*, the certain of a central library would diminish the financial load on the individual medical colleges and improve the library facilities for all. It should, however, be understood that each medical college will require a minimum library service for its own students and staff.

The Committee understood that the prices of text books could be reduced by about one-third if loose leaf pages are imported, and the binding work is undertaken in India by publishing firms. The Committee felt that this should be exploited and recommends that this be permitted until such time as it is possible to undertake the printing of text books in India. The Committee understood that this matter is already under consideration by the Government of India.

The Committee also understood that a number of publishing firms are now prepared to undertake the publishing of text books written by Indian authors without any expense to the individuals concerned.

The Committee, therefore, recommended that Indian authors be encouraged to write text books, which would naturally reflect their own experience in the varying conditions in the country. One of the methods of reducing the cost of medical education to the students would be to arrange for printing of Indian editions of recognised and recommended text books. The Committee was informed that this has already been initiated by the Government of India. The Committee recommended that the number of books now proposed should be enlarged and recommended that this matter be further examined so that standard text books could be utilised as a basis for all medical colleges in India, and that action be taken to expedite printing and publishing of such books in India as soon as possible.

The Committee strongly recommended that in order to promote the widest use of library facilities, libraries should be kept open to permit students to read during the non-working hours and also recommended the introduction of a system of Book Banks or lending libraries as prevail in other countries. A separate room for study for post-graduates and research workers and one for the Professors and the teaching staff should be provided. No library should be under the charge of persons not qualified as librarians. It should also be located so that easy access to the library may be available to all who use it, *e.g.*, in the ground or first floor. The Committee agreed that Rs. 1 lakh would be adequate for books and journals for Library as an initial outlay. (*See* Appendix C).

Students :

The Committee are aware that the majority of students require longer than the scheduled period of 4½—5 years to complete the medical course, and a considerable wastage of man-power is caused through failures in examinations. The economic implications of such failures are considerable, and the Committee felt that any steps that would minimise such failures would lead to reduction in the cost of medical education.

The Committee discussed the question of admission and felt that steps should be taken to emphasise that students should be admitted mainly on merit as is already being done in the majority of medical colleges. Difficulty arises sometimes in judging who are the best students. The primary consideration should undoubtedly be given to the standard of achievement at the University examination which will be preliminary for joining the medical course. At the same time, many authorities feel that no added advantage arises from having a separate examination for students applying for the medical course, and that major emphasis can be entirely placed upon the ranking in the University examination. It would, however, be desirable that consideration be given to some of the main extra-curricular activities.

The Committee also discussed the possibility of admitting only science graduates to the medical course. As this would prolong the duration of studies and add to the cost of medical education, it was felt that such requirement could not be insisted on at present, but the desirability of keeping this in mind for later implementation was recommended. A suggestion has been made that about 10% of the total strength may be recruited from this class. These students could perhaps be taken to the second year of the under-graduate course but must qualify in the subjects in which they had not qualified by undergoing regular courses for which special arrangements should be made.

In reviewing some of the teaching methods, the Committee felt that the most effective teaching in medicine was with small groups of students. Wherever there is deficiency in the strength of junior staff members, the Committee felt that the maximum utilization of post-graduate students as junior teachers would help in obviating this particular difficulty.

The Committee, therefore, felt that wherever under-graduate and post-graduate teaching was combined, economy may be achieved by utilization of post-graduate students, wherever available, as junior teacher in the under-graduate teaching programme, and recommended that this may be undertaken.

The Committee reviewed the available information regarding the estimated expenditure by students required for basic maintenance during their studies. (Appendix D). The wide variations were an index of the variations in cost indices at the various places where colleges are situated. It was not possible to review this in detail, or to make any substantial recommendations to further reduce these expenditures.

The Out-Patient Department:

The Committee felt that this is one of the aspects concerning hospitals in general and teaching institutions in particular, which need particular attention. The out-patient departments of practically all hospitals are inadequate and over-crowded, and especially so in teaching institutions, where the out-patient department, in juxtaposition with the hospital, often deals with 1000 to 4000 out-patients (old and new cases) a day.

With the increasing importance of ambulatory and domiciliary care programmes in bringing of medical relief and in the control of communicable diseases, as has been demonstrated at the Chemotherapy Research Centre, Madras, in the case of tuberculosis, the Committee felt that it was desirable to exploit fully the out-patient departments of teaching hospitals to the maximum. As the out-patient departments of the majority of hospitals in India including the teaching hospitals leave much to be desired, the Committee felt that exploitation of this potential field of training needs considerable strengthening, as is being done in many countries of the world. The Committee felt that by strengthening out-patient departments with adequate staff, and by reorganisation of existing physical facilities, considerable economy can be effected, and that there would be no need to increase the hospital (ward) facilities to any considerable extent. It would also have the added advantage of training the student under conditions more related to the work that he would be required to undertake after graduation, whether as a private practitioner or an Officer-in-charge of a dispensary or Health Centre either in the rural or urban areas.

The Committee recommended that by improving the out-patient service in each medical college and providing additional facilities for diagnosis and treatment it would be possible to eliminate the necessity of increasing the number of beds in a teaching hospital with increased admissions of students.

Intensive use of existing facilities in Medical Colleges:

The Indian Medical Council had recently recommended that admissions to existing medical colleges could be stepped up, as an emergency measure, to an annual admission of 200 medical students. It felt it important to stress the necessity for a proportionate increase in staff and certain laboratories and other buildings. We feel that this is a useful interim method of dealing with the problem of training an increasing number of doctors.

Summary of Recommendations:

The Committee's recommendations are based on a medical college with 100 annual admissions. While making recommendations the Committee has kept in view that efficiency should not be sacrificed at any stage of medical training of the students. In addition to the items of Buildings and Equipment the Committee has tried to suggest ways and means of effecting economy from other points of view of a Medical College with 100 annual admissions.

1. **Buildings.**—Where sufficient land is available considerable reduction in the cost of medical education can be effected by the construction of buildings with pre-fabricated roofing and use of steeltubular structure. Where medical colleges must be built as permanent structures, the Committee felt that it would be possible to economise by omitting "dead space" as far as possible so that the maximum utilization could be made of laboratories, class rooms, etc., through sharing these by several departments.

The Committee's estimates are based on the assumption that the cost of usual structure would be Rs. 15 per sq. ft. and that of pre-fabricated structure, Rs. 8 per sq. ft.

2. **Equipment.**—Special and expensive apparatus should not be duplicated but should be centralized. Considerable economy could be exercised in this matter through the pooling of expensive apparatus required by many departments in one place, provided full co-operation and collaboration exists between the different departments. This will minimise unnecessary duplication and multiplication of the same set of apparatus. It is mainly a question of organisation of an adequate time schedule.

3. **Reorganization of the Departments.**—Suggestions for reorganization and the possible ways of combining the use of facilities by several departments have been made.

4. **Library.**—Until Indian text-books are available, book-sellers could be persuaded to import loose leafs and bind locally. A book bank is considered very useful and will meet the requirements of a number of staff and students. The establishment of a lending library on the lines of the well known pre-war Lending Library in London, where students could obtain books for periods ranging from 15 days to 1 month on payment of a small amount per year, should be considered especially in cities where several medical colleges exist. A common Library to serve several medical colleges established in a single city, is also recommended. Each College, however, will still require its own units.

The library should be kept open between the hours of 7 a.m. and 9 p.m., so that at any time when the students are not engaged, they can come to the library.

5. **Students.**—So far as admission of students is concerned, there is no question that the best students must be admitted. Considerable wastage of man-power is caused through failures in examinations. The economic implications of such failures are considerable, and any steps that would minimize such failures would lead to reduction in the cost of medical education.

6. **Hostels for students.**—Hostels are essential and may be of prefabricated materials. It may not be possible to allot individual rooms. Dormitories with common bath rooms should be adequate.

7. **Out-patient Departments.**—As these provide rich teaching material and have not been adequately exploited for teaching purposes, these should be strengthened with adequate staff, and by reorganization of existing physical facilities. Their adequate utilization could avoid a concomitant increase in hospital (ward) facilities with increasing number of students and effect considerable economy.

8. **Staff.**—More use could be made of adequately qualified honorary staff for teaching purposes so that individual attention can be given to the increasing number of students.

The services of non-medical scientists ; *e.g.*, Biochemists, Biophysicists, Statisticians, etc., should be utilised for teaching non-clinical subjects.

Wherever there is deficiency in the strength of the junior staff and where under-graduate and post-graduate teaching is combined, maximum utilisation of post-graduate students could be made as junior teachers.

9. **Maintenance of Equipment.**—It is unfortunate that very often costly equipment remains unused for a long time and many instruments are rendered unserviceable for lack of adequate maintenance. A small workshop for teaching hospitals is, therefore, very necessary and persons employed there should have had training in instrument technology.

Acknowledgment :

The Committee desires to make specific acknowledgment of the invaluable assistance given to it and expresses its warm appreciation of the work of the staff of the Director General of Health Services, who were only too willing to assist it.

It also acknowledges with gratitude the assistance given to it by eminent members of the medical profession, who, often at very short notice, gave us most valuable advice and suggestions.

Appendix 'A'

COMPARATIVE STATEMENT OF COSTS OF MEDICAL COLLEGES

Sl. No.	Name of the College	Cost of construction of college buildings, with design & other details	Cost of construction of college hostel with designs	Cost of construction of attached hospital building with design	Cost of construction of staff quarters with designs	Cost of other buildings	Cost of electric & sanitary fittings, air-conditioning, gymkhana, horticultural, fencing, roads, etc.	Cost of land acquired & its area	Cost of development of the land	Cost of equipment obtained separately for each Department of the College & hospital	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
		(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	
1	Medical College, Pondicherry.	32.34 lakhs.	19.35 lakhs.	80.99 lakhs	59.86 lakhs (detailed statement attached).	1.97 lakhs	Not shown. Separately included under 1-5.	164 acres 1.01 lakhs	40.50 lakhs	5.24 lakhs (detailed statement attached).	
2	College of Medical Sciences, Varanasi.	52,59,200 design not sent.	47,16,000 (with staff quarters).	23,65,000	Included in col. 4.	..	Buildings not yet ready.	Nil	Nil	2,75,000	
3	Medical College, Hubli.	30,92,798 design not sent.	13,44,065	49,708 lakhs 9,16,848 (casualty & O.P.D.).	26,61,763	33,26,114	4,43,394 (Electricity)	22,72,588	..	Estimates & Plans are under preparation.	
4	Medical College, Calicut.	31.44 lakhs design not available.	12.62 lakhs design not available.	9.27 lakhs for one block (design not available). Total Rs.36 lakhs for all departments.	3.43 lakhs	1.19 lakhs	4,80,000	15,535	2.64 lakhs	19,51,843 for college.	Statement attached.

1	2	3	4	5	6	7	8	9	10	11	12
5	All India Institute of Medical Sciences, New Delhi.	197.52 lakhs (design not readily available).	N.A.	263.57 lakhs	N.A.	51.64 lakhs.	Electric & sanitary fitting etc. included in the estimates. Cost for gymkhana, etc. not. included.	No cost. 160 Acres.	30.01 lakhs.	N.A.	Note from the Senior Architect attached.
6	Maulana Azad Medical College, New Delhi.	50 lakhs (not completed yet).	26.00 lakhs (not completed yet).	The hospital was constructed in 1936. Blocks of 120 beds have been added at a cost of 5 lakhs each. The cost of construction has been taken at the rate of Rs. 10,000 per bed and thus the figure of expenditure comes to Rs. 1,00,30,000.	Rs. 30.00 lakhs (not yet completed).	Rs. 2.00 lakhs (not yet completed). Amphi Theatre.	Cannot be given separately.	Nil	Nil	College—6,04,256.62. Hospital—21,55,000. (Statement attached).	..
7	Medical College, Aurangabad.	Statement attached.									
8	Medical College, Jabalpur.	39.00 lakhs.	23.40 lakhs.	85.80 lakhs.	48.69 lakhs.	2.97 lakhs.	19.66 lakhs.	5.92 lakhs.	2.50 lakhs.	Not given	Total of Columns 3 to 10 227.94 lakhs.
9	Kurnool Medical College, Kurnool.	20,49,842	14,65,620	24,70,948	Not given						

MEDICAL COLLEGE, PONDICHERRY

Statement I of Estimates for Staff Quarters

Serial No.	Type of Quarters	Number	Rate	Amount (Rs.)
1	C.I. type VI(b) quarters, double storey . .	1	36,771	36,771
2	C.I. type VI(c) quarters, double storey . .	12	30,638	3,67,656
3	D.I. type V quarters, double storey . .	4	25,343	1,01,372
4	D. II type IV quarters, double storey . .	28	21,205	5,93,740
5	E. type III quarters, double storey . .	84	11,517	9,67,428
6	F. type II(b) quarters, single storey . .	60	7,723	4,63,380
7	G. type II(a) quarters, double storey . .	284	6,086	17,28,424
8	H. type I quarters, double storey . . .	556	3,106	17,26,936
				59,85,707 or Rs. 59·86 lakhs

Statement II of Equipment held in the various Departments

		Rs.	nP.
1	Physics	21,779	69
2	Chemistry	10,196	71
3	Biology	37,742	79
4	Anatomy	1,03,792	67
5	Physiology	57,579	00
6	Biochemistry	33,620	00
7	Pathology	92,362	82
8	Pharmacology	28,054	00
9	Bacteriology	64,336	40
10	Preventive and Social Medicine	43,165	00
11	Forensic Medicine	8,762	00
12	Medicine	1,410	51
13	Artist Unit	235	00
14	Surgery	1,677	34
15	Anaesthesiology	1,589	11
16	Dentistry	599	59
17	Midwifery and Gynaecology	3,768	00
18	Orthopaedic Surgery	413	37
19	V. D. & Dermatology	6,837	24
20	Workshop	6,083	09
		5,24,004	33

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MEDICAL COLLEGE, CALICUT

	Estimated amount	Actual exp. upto the end of 12/60	Remarks
	(Rs. lakhs)	(Rs.)	
1. Cost of construction of college buildings with designs and other details.	31.44	29,88,711	
2. Cost of construction of college hostel with designs.	12.62	14,33,138	3 blocks, two for men students and one for lady students.
3. Cost of construction of attached hospital building with designs.	9.27	5,72,428	The hospital building has got 4 different blocks. At present the construction of only one block is taken up. There will be 125 beds in this block.*
4. Cost of construction of staff quarters with designs.	2.97	2,87,175	A type quarters for Professors and Asstt. Profs. (9 Nos.).
Last grade servants quarters	0.46	6,719	The construction has not completed. The work is in progress.
TOTAL ..	3.43	2,93 894	
5. Cost of other buildings which do not fall under the above categories with designs.	0.28	23,189	Gas House attached to the College.
	0.73	16,665	Canteen : Not completed. Work is in progress.
	0.055	3,905	Garrage to house the college bus.
	0.125	..	Store shed attached to the Gas House (work just started).
	1.19	43,759	
6. Cost of electric and sanitary fittings, air-conditioning gymkhana, horticultural, fencing rounds etc.	..	2,80,000	Electrification of the college building and quarters.
	..	2,00,000	Water supply & sanitary installations.
	..	4,80,000	

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*The cost of construction of other three blocks will be roughly Rs. 26 lakhs. When all the blocks were constructed there will be provision of 500 beds. Out-patient ward, X-ray block, Operation Theatre and kitchen and store and Nurses quarters are required to complete the hsopital block. All these may cost roughly Rs. 36 lahks.

	Estimated amount	Actual exp. upto the end of 12/60	Remarks
	Rs. Lakhs	(Rs.)	
7. Cost of land acquired and its area.	..	15,535	The area is roughly 3.5 acres. The area acquired is very small as about 150 acres of Govt. land available at site so the expenditure of land acquisition is very low.
8. Cost of development of land .	2.64	2,47,848	Accommodation for the staff and students : For the staff about 130 quarters are to be constructed; for the students an additional hostel to accommodate about 180 students is required. The cost of constructing quarters and additional hostel will be roughly Rs. 22 lakhs.
9. Cost of equipments obtained separately for each dept. of the college and hospital.	..	19,51,843	
10. Any other additional information that may be considered useful for the work of the committee.	..	..	Nil.

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NEW DELHI

Extract from Senior Architect's note dated 27-2-61

(1) *Cost of construction of college buildings with designs and other details* :

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	In rupees (lakhs)
Pre-clinical Block	102.81
Ancillary buildings	9.56
Teaching Block	85.15
TOTAL .	197.52

Copies of drawings and other details are not readily available.

(2) *Cost of construction of college hostel with designs* :

It would be better to follow latest University Grants Commission's standards about hostels which recommend :

Under graduates :

Single-seater	85 to 90 Sq. ft.
Two-seaters	75 to 80 Sq. ft.
Three-seaters	70 to 75 Sq. ft.

Post-graduates :

Maximum . . . . 100 Sq. ft. per student.

Total area of the hostel should not exceed 2.3 to 2.5 times floor area per student.

(3) *Cost of construction of attached hospital building with designs :*

	In rupees (lakhs)
O. P. D.	67.01
Hospital (650 beds)	180.34
Paying beds (50 beds)	16.22
	263·57

Copies of designs are not readily available.

(4) *Cost of construction of staff quarters with designs :*

It would be better to adopt Govt. standards.

(5) *Cost of other buildings which do not fall under the above categories with designs :*

	In rupees (lakhs)
Assembly Hall	16.81
Library	10.71
Museum	15.81
Laundry	8.31
	51·64

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(6) *Cost of electric and sanitary fittings, air-conditioning, gymkhana, horticultural, fencing roads, etc. :*

Cost of electric, sanitary fittings and air-conditioning has already been included in the cost of individual buildings, mentioned above. The above costs do not include cost of gymkhana, horticultural, fencing road, etc.

(7) *Cost of land acquired and its area :*

The land was nazul and therefore the Institute had to pay no cost.

Area : About 160 Acres

(8) *Cost of development of the land :*

Cost of development : Rs. 30·01 lakhs.

MAULANA AZAD MEDICAL COLLEGE, NEW DELHI

Annexure I.—Statement showing the cost of equipment of the various Departments

Serial No.	Name of the Department	Amount
		Rs.
1	Surgery Department	6,508.00
2	Preventive & Social Medicine	972.00
3	Physiology Department	1,75,000.00
4	Medicine Department	..
5	Biochemistry Department	52,000.00
6	Pathology/Bacteriology Department	1,33,354.00
7	Pharmacology Department	1,03,529.00
8	Anatomy Department	92,093.62
9	Library	40,800.00

Annexure II.—Irwin Hospital—108 beds

Sanctioned original budget for contingencies for the year 1960-61 is indicated below :—

	Rs.
Furniture	20,000
Medicines & Instruments	10,50,000
Diet	4,00,000
Bedding & Clothing	35,000
X-ray Charges	2,75,000
Telephone	15,000
Service Stamps	5,000
Pay of Contingencies, Paid staff	5,000
Misc. Charges	3,50,000
TOTAL	21,55,000

MEDICAL COLLEGE, AURANGABAD

Statement showing the details of buildings with costs

Serial No.	Name of the building	Storeys	Cost
			Rs.
1	Administrative Block	Three	8,28,120
2	X-ray ward & Casualty Section	Three	1,40,021
3	Operation theatre	Three	7,61,890

Serial No.	Name of the building	Storeys	Cost
			Rs
4	Typical wards	Three	18,14,731
5	Kitchen and laundry	Three	5,57,389
6	Out-patient department	Two	15,91,108
7	Post-mortem and Mortury	Single	1,22,052
8	Medical College Buildings	Five	42,46,645
9	Nurses Quarters	Three	9,52,822
10	Dean Bungalow	Single	55,610
11	Boys' Hostel	Two	8,47,000
12	Kitchen for Boys	Single	55,610
13	Classes I & II Officers quarters	Two	1,70,230
14	Animal House	Two	1,44,847
15	Frog Pond	Single	4,301
16	Pavilion	Single	35,379
17	Canteen and Cyclestand	Single	47,739
18	Covered parking	Single	21,677
19	Ambulance Garrage	Single	13,300
20	Water Storage tower	Single	1,07,100
21	Class III servants quarters	Two	2,37,152
22	Class IV servants quarters	Two	18,77,471
23	Electric Substation	Single	12,994
24	Incinarator		860
25	Classes III & IV servants quarters	Two	4,77,000
26	150 bedded Barrack type Hospital	Single	6,42,000
27	Constg. Temp. O.P.D.	Single	1,13,612
28	Constg. Temp. Laboratory	Single	1,57,190
29	Constg. Compound wall for Medical College		2,17,620
30	Lady students hostel	Three	5,34,960
31	Black topped roads		2,50,000
32	Arboriculture		20,042

Appendix 'B'

Estimate of Low-cost designs for buildings of Medical Colleges

Sl. No.	Departments	Area in sq. ft.
1	Physics and English	3,420
2	Chemistry and Bio-Chemistry	5,745
3	Biology, Anatomy, History and Experimental Surgery	13,155
4	Physiology, Pharmacology, Experimental Medicine	5,865
5	Pathology, Bacteriology and Forensic Medicine	11,025

Sl No.	Departments		Area in sq. ft.
6	Social and Preventive Medicine		4,665
7	Library	4,095	34,865
8	Assembly Hall	5,385	
9	N. C. C.	1,245	
10	Central Stores	5,940	
11	Cloak Rooms	7,865	
12	Central Animal House	3,135	
13	Gas Plant	600	
14	Lecture Halls	6,000	
15	Workshop	600	
16	Corridor space about 1/5th total room space		15,748
		TOTAL .	94,488

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Estimate for Low-cost designs for buildings of Teaching Hospitals

Serial Number	Description	Dimensions	No. of Units	Area in square feet
1	2	3	4	5
1	Administrative Block	250'×55'	1	13,750
2	Wards	125'×20'	8	20,000
3	Lavatories & Baths	6'× 6'	8	288
4	Corridor	210'×30'	1	6,300
5	Operation Theatre	250'×55'	1	13,750
6	Isolation Ward	125'×20'	1	2,500
7	Lavatory for Isolation Ward	6'× 6'	2	72
8	Mortuary	30'×20'	1	600
9	House Surgeons and Internees	100'×60'	1	6,000
10	Nurses Quarters	192'×60'	1	11,520
11	Staff Quarters	50'×30'	4	6,000
12	Kitchen	90'×60'	1	5,400
13	Class IV Servants Quarters	160'×30'	2	9,600
14	Out-patient Block	250'×55'	1	13,750
			TOTAL .	1,09,530

Appendix 'C'

Estimated Expenditure on the Establishment of A Medical College

Sl. No.	Item	Estimated expenditure	
		As per General Gupta's Sub-Committee	As recommended by Hajra Committee
I.	(a) College Buildings	*22,00,000	†8,80,000 (pre-fabricated).
	(b) Laboratory tables, furniture and ancillary services	2,50,000	2,50,000
	(c) Equipment for Laboratory etc.	6,00,000	6,00,000
II.	(a) Integrated research Unit building	3,00,000	80,000
	(b) Laboratory tables, furniture & ancillary services	70,000	1,00,000
	(c) Equipment for Laboratory	3,00,000	3,00,000
III.	Books and journals for Library	1,00,000	1,00,000
IV. &	Hostel for students and	28,00,000	15,00,000 (pre-fabricated).
V.	Staff quarters	20,00,000 (for single storeyed)	
VI.	Gas & refrigeration Plants	1,30,000	1,30,000
VII.	Gymkhana, Horticultural, fencing, road etc.	2,50,000	2,50,000
	TOTAL	70,00,000	41,90,000
		62,00,000 if single storeyed buildings are constructed.	

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*These estimates are based on floor area of 84,025 sq.ft. (Plinth Area=84,025 × 100/55= 1,52,773 sq.ft.) @Rs. 15 per sq.ft. and do not include provision for pre-medical/pre-professional course.

†These estimates are based on plinth area of 1,10,000 sq.ft. @Rs.8.00 per sq.ft. and include provision for pre-medical/pre-professional course.

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Appendix 'D'

Statement showing the details of expenditure incurred on M.B.B.S. course in Medical Colleges

Sl. No.	Name of State	Tuition and other fees Rs.	Board & Lodging Rs.	Instruments, Books, Clothing etc. Rs.	Miscellaneous Rs.	Total P.A. Rs.	Average P.M. Rs.	Remarks
1	2	3	4	5	6	7	8	9
1	*Andhra Pradesh—*							
	(1) Osmania Medical College, Hyderabad.	142.00	(F) 780.00 (M) 553.68	*250.00	150.00	(F) 1332.00 (M) 1095.00	(F) 106.000 (M) 122.00	*Excluding clothing transport.
	(2) Guntur Medical College, Guntur.	425.00	(F) 960.00 (M) 1140 00	675 00	..	(F) 20,60.00 (M) 22,40.00	(F) 172.00 (M) 187.00	
	(3) Kurnool Medical College, Kurnool.	270.00	840.00	480.00	..	1590.00	150.00	
	(4) Gandhi Medical College, Hyderabad.	240.00	..	300.00	65.00	605.00	**67.00	**Excluding Boarding & Lodging.
	(5) Andhra Medical College, Visakhapatnam.	(M) 262.00 (F) 141.00	(M) 800.00 (F) 600.00	(M) 200.00 (F) 200.00	(M) 360.00 (F) 360.00	(M) 1,622.00 (F) 1,301.00	(M) 135.00 (F) 108.00	
	(6) S. R. M. Medical College, Kakinada. (7) Medical College, Warangal.	Not known.				—		
2	*Assam—*							
	(8) Assam Medical College, Dibrugarh.	Tuition fee Rs. 12·00 P.M.	Mess dues Rs. 50·00 P.M.	..	Rs. 7·25 P.M. for boarders only.		62.00 for non-boarders. 69.25 for boarders.	

1	2	3	4	5	6	7	8	9
Bihar—								
	(9) Patna Medical College, Patna.	Tuition fee Rs. 12.50 P.M.	Messing & Hostel rent 59.00 P.M.	450.00 P.A.	30.00 P.M.	..	..	
	(10) Darbhanga Medical College, Laheriasarai.	1.50 P.M.	Messing 60.09 P.M. Hostel rent 81.00 & 86.00 P.A.	400.00 P.A.	20.00 P.M.	..	..	
	(11) *Medical College, Ranchi.	..		..	..	..	..	*Students for this College are at present admitted at Darbhanga & Patna.
4 *Gujrat*—								
	(12) B. J. Medical College Ahmedabad.	420.00	**108.00	†	1392.00	1,920.00	160.00	**Only hostel rent. Other expenses included in Miscellaneous expenses. †Included in Miscellaneous expenses.
	(13) Medical College, Baroda.	432.00	684.00	480.00	144.00	1,740.00	145.00	
	(14) M. P. Shah Medical College, Jamnagar.	360.00	624.00	300.00	36.00	1,320.00	110.00	
5 *Jammu & Kashmir*—								
	(15) Medical College, Srinagar.	360.00	840.00	360.00	360.00	1,920.00	160.00	
6 *Kerala*—								
	(16) Medical College, Trivandrum.	309.00	677.25	250.00	..	1,265.25	‡137.36	‡P.M. (*i.e.*, 1/9th).

(17) Medical College, Calicut.	309.00	590.00	135.00	..	1,034.00	‡114.88
7 *Madhya Pradesh*—						
(18) Gandhi Medical College, Bhopal.	152.00	720.00	320.00	..	1192.00	100.00 Approx.
(19) M. G. M. Medical College, Indore.						
(20) G. R. Medical College, Gwalior.						
(21) Medical College, Jabalpur.						
8 *Madras*—						
(22) Madras Medical College, Madras.	261.75	960.00	862.00	..	2,083.75	174.00
(23) Stanley Medical College, Madras.	261.75	960.00	576.00	..	1,797.75	150.00
(24) Madurai Medical College, Madurai.	240.00	900.00	480.00	180.00	1,720.00	150.00
(25) Tanjore Medical College, Tanjore.	Not known.					
(26) Christian Medical College, Vellore.	540.00	948.00	600.00	102.00	2,180.00	157.00
9 *Maharashtra*—						
(27) Grant Medical College, Bombay.	432.00	648.00	240.00	180.00	1,500.00	125.00
(28) Seth G. S. Medical College, Bombay.	420.00	840.00	240.00	300.00	1,800.00	150.00

1	2	3	4	5	6	7	8	9
	(29) Topiwala National Medical College, Bombay.	420.00	900.00	360.00	240.00	1,920.00	160.00	
	(30) B. J. Medical College, Poona.	420.00	696.00	84.00	..	1,200.00	100.00	
	(31) Medical College, Nagpur.	300.00	600.00	480.00	300.00	1,680.00	140.00	
	(32) Medical College, Aurangabad.	192.00	420.00	204.00	84.00	900.00	75.00	
10 *Mysore*—								
	(33) Medical College, Mysore. (34) Bangalore Medical College, Bangalore. (35) Karnatak Medical College, Hubli.	424.00	840.00	500.00	200.00	1,964.00	164.00	In the case of Scheduled Castes and Scheduled Tribes average monthly expenditure is Rs. 90.
	(36) Kasturba Medical College, Manipal.	..	..	..	..	..	220.00	Details not known.
11 *Orissa*—								
	(37) S. C. B. Medical College, Cuttack.	184.00	663.00	600.00	..	1,447.00	120.58	
	(38) Medical College, Burla.	Not known.						
12 *Punjab*—								
	(39) Medical College, Amritsar. (40) Govt. Medical College, Patiala.	276.00	900.00	360.00	144.00	1,680.00	140.00	

(41) Christian Medical College, Ludhiana.	Not known.						
13 *Rajasthan*—							
(42) S. M. S. Medical College, Jaipur.	261.00	710.00	500.00	40.00	1511.00	..	Electric charges P.A. Rs. 40.000.
(43) Medical College, Bikaner.	Not known.						
14 *Uttar Pradesh*—							
(44) G. S. V. Medical College, Kanpur.	200.00	712.50	466.00	..	1,378.50	142.00	
(45) Medical College, Agra.	130.00	960.00	640.00	..	1,730.00	145.00	
(46) K. G. Medical College, Lucknow.	200.00	1,080.00	600.00	..	1,880.00	156.00	
15 *West Bengal*—							
(47) Medical College, Calcutta.	237.00	960.00	568.00	..	1,765.00	147.00	
(48) N. R. Sircar Medical College, Calcutta.	231.00	840.00	150.00	240.00	1,461.00	122.00	
(49) R. G. Kar Medical College, Calcutta.	239.00	960.00	380.00	180.00	1,759.00	147.00	
(50) Calcutta National Medical Institute, Calcutta.	305.00	876.00	240.00	264.00	1,685.00	140.00	
(51) Bankura Sammalini Medical College, Bankura.	301.00	732.00	180.00	264.00	1,477.00	123.00	

1	2	3	4	5	6	7	8	9
16 *Delhi*—								
	(52) M. A. Medical College, New Delhi.	323.00	1,080.00	390.00	715.50	2,508.50	209.04	
	(53) Lady Hardinge Medical College, New Delhi.	Not known.						
	(54) A. I. I. of Medical Sciences, New Delhi.	Not known.						
17 *Pondicherry*—								
	(55) Medical College, Pondicherry.	..	..	..	..	..	*125.00	*Including tuition & other fees, cost of books, boarding & lodging charges and and secondary personal expenses. Details not available.

Appendix B—29

Extracts from the Report of the Nursing Committee to Review Conditions of Service, Emoluments, etc. of the Nursing Profession

Nurses—

Pay scales, and allowances.—In view of the wide difference at present in pay scales and allowances for nurses in the different States we felt it would not be practicable, at this stage, to recommend uniformity of pay scales and allowances for all grades of nursing personnel. We, therefore, recommend that we consider to be the minimum pay scales and allowances for nurses, midwives and health visitors.

Pay Scales—

Nurses.—The desirable scale of pay would be Rs. 100 to 150, but the minimum should be Rs. 75 to 125, with, in all cases, allowances for board and lodging and uniform and laundry.

Midwives.—Desirable to give a starting pay of Rs. 75, but the minimum starting pay should be Rs. 50 with free quarters and an allowance of Rs. 10 per month for uniform and laundry.

Health Visitors.—The scale of pay should be Rs. 100 to 185 with free quarters and allowances as admissible to staff nurses in hospitals.

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Dearness.—As admissible in the State.

Messing.—It is desirable to give an allowance of Rs. 2. per day, but in no case should it be less than Re. 1 per day.

Uniform.—It is desirable to give an allowance of Rs. 75 per annum, but the minimum allowance should be Rs. 50 per annum.

Laundry.—The minimum allowances should be Rs. 3 per month.

Pension and Provident Fund.—A view was expressed that provident fund was more advantageous for nurses as many of them have a break in service after marriage. We recommend that either provident fund or pension should be provided where such provision has not been made, leaving it to each State to decide what form of provision be made.

Auxiliary Nurses and Midwives.—We consider that auxiliary nurses and midwives, who can be trained with less expense in a shorter time, would be very useful in supplementing the nursing service, provided they are assigned duties in keeping with their training, and are required to work under supervision. Their pay scale should be similar to that of midwives but they should be given allowances for messing, uniform and laundry as admissible to nurses in hospital. We recommend that—

(1) no auxiliaries be appointed in hospital wards or departments used for the training nurses and midwives.;

(2) in a training centre for auxiliary nurses and midwives the teaching and administrative staff (including sisters or nurses in charge of wards) be fully qualified ;

(3) in hospitals to which no training school is attached the nursing staff could be constituted largely of auxiliaries, provided that there is a fully trained nurse in charge of each ward or department and there is a minimum of four fully trained nurses on the staff ;

(4) auxiliary nurse and midwife may be appointed to work in health centres and sub-centres, provided they are supervised by a Public Health Nurse or Health Visitor.

Appendix B—30

Requirement of Nursing and Para Medical Personnel

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	Year	Ratio to be attained	Number Required	
1. *Nurses*—				
Short-term	1971	1 : 5,000	1,10,940	
	1981	1 : 2,000	2,41,060	Additional number required.
Long-term	1991	1 : 1,000	5,35,860	
		TOTAL .	8,87,860	
2. *Auxiliary Nurse-midwives*—				
	1976	1 : 5,000	1,25,020	
3. *Pharmacists*—				
	1976	1 : 10,000	62,510	
4. *Laboratory Technicians*—				
	1976	1 : 10,000	62,510	
5. *Sanitary Inspectors*—				
	1976	1 : 10,000	62,510	

B—31

Statement showing the Categories of Para-Medical Personnel in Civil/Army Employ, their Duration of Course and the Minimum Educational and other Qualifications required for Admission

Sl. No.	Name of Course	Duration of Course		Minimum Qualifications (Educational and others)	
		Civil	Army	Civil	Army
1	2	3	4	5	6
1	Dental Hygienist	One year.	*Class* 3— 14 months for Dental Operating Room Assistant. 18 months for Direct Recruits.	1. Matriculation Examination of a recognised University taking science subjects. or Equivalent recognised qualification.	*For Dental operating Room Assistant* 1. At least 5 years man's service. 2. Army special certificate of Education. 3. Passed pre-training test at Command Military Dental Centre.
			Class 2— Further instruction for 3 months.	2. 17 years of age.	*For Direct Recruits* 1. Matriculation with Science 2nd Division. 2. Passed pre-training test at Command Military Dental Centre.
			Class 1— Further instruction for 3 months.		
2	Dental Operating Room Assistant.	N.A.	*Class* 3— 4 months.	N.A.	Nursing orderly class 3.
			Class 2— 6 months.		Class 3.
			Class 1— 12 months.		Class 2.

1	2	3	4	5	6
3	Dental Technician	N. A.	*Class* 3— 12 months. *Class* 2— 6 months. *Class* 1— 12 months.	N. A.	Nursing orderly Class 3. Class 3. Class 2.
4	Radiographers	18 months	*Class* 3— 9 months. *Class* 2— 3 months instructions. *Class* 1— 1. Practical Work in X-ray Department as Radiographer Class 2 for one year. 2. Course of instruction 3 months.	Intermediate Examination of any recognised University with Physics or Chemistry as special subject or equivalent qualification.	1. 4 years man's service. 2. Must be not below Havildar in rank. 3. *A 2nd class education. 4. *A English 1st Class. 5. A map reading. 6. Nursing Assistant Class 3 and X-ray Assistant Class 1. 7. Experience as X-ray Assistant Class 1 for one year. *A.=Army.
5	Laboratory Technician	1 year	9 months	1. Inter Service Certificate of any University or equivalent. 2. Higher Secondary Examination where 3 years degree course is introduced.	1. Same as 1-5 above. 2. Nursing Assistant Class 3 and Laboratory Assistant Class 1. 3. Experience as Laboratory Assistant Class 1 one year.
	Laboratory Technician (T.B.)	3 months.	—	1. School Final or Matriculation. 2. One year Laboratory training in general laboratory work.	
6	Blood Transfusion Assistant	N.A.	*Class* 3— 6 months. *Class* 2— 4 months. *Class* 1— 6 months.	N.A.	Class 3. Class 2.

7 Dispenser	2 years (minimum 180 working days of 5 hours each year. Sessional Examination Practical Training of 750 hours covered in at least 3 months).	*Class* 3— 9 months and 3 months practical training. *Class* 2— 3 months and 1 month for practical training. *Class* 1— 3 months and 1 month practical training.	(a) 1. Matriculation Examination or 2. Secondary School leaving certificate examination with science. (b) Any other examination accepted by the Pharmacy Council of India or equivalent to any of the above examinations.	*Class* 3— 1. Nursing Assistant Class 3. 2. Education Army certificate 3rd. 3. 2nd English Certificate. *Class* 2— 1. As in 1 above (class 3). 2. 2 years man's service. 3. 2nd Education Army Certificate. 4. 2nd Army English. *Class* 1— 1. As in 1 & 2 above (class 2). 2. 2nd Education Army Certificate. 3. 1st Army English.
8 Laboratory Assistant	N. A.	*Class* 3— 9 months.	Matriculation with Science plus experience in Laboratory work.	*Class* 3— 1. Nursing Assistant Class 3. 2. 3rd Army Certificate. 3. 2nd Army English Certificate. 4. 3rd Map Reading.
		Class 2 4 months.		*Class* 2— 1. Nursing Assistant Class 3. 2. 2nd Army Certificate. 3. 2nd Army English Certificate. 4. Map reading 3rd Standard. 5. 2 years man's service.
		Class 1 6 months.		*Class* 1— 1. Nursing Assistant Class 3. 2. 2nd Army Certificate. 3. 1st Army English Certificate. 4. 2nd Standard map reading. 5. 2 years man's service.

1	2	3	4	5	6
9	Physiotherapy Assistant	Two years	*Class* 3— 9 months. *Class* 2— 6 months. *Class* 1— 9 months.	1. Candidate must be 18 years of age at the time of admission. 2. The candidate must furnish proof of having passed at least Inter-Science (B. Group) examination or equivalent.	N.A.
10	Mental Nursing Assistant	12 months (3 months for men student nurses).	*Class* 3— 6 months. *Class* 2— 3 months. *Class* 1— 6 months.	1. Recognised certificate in General Nursing and registration as a general Nurse.	N.A.
11	Special Treatment Assistant	N. A.	*Class* 3— 6 months. *Class* 2— 6 months. *Class* 1— 9 months.	N.A.	
12	Operating Room Assistant	3 months (for men student Nurses) during three years training period.	*Class* 3— 6 months. *Class* 2— 9 months. *Class* 1— 12 months.	N.A.	
13	Sanitary Assistant/Inspector	One year (9 months in theory and practical and 3 months in field work in Urban and Rural areas).	*Class* 3— 1. 5 months. 2. 7 months training at field hygiene station. *Class* 2— 1. 3 months. 2. 3 months practical training at field hygiene section/Station. *Class* 1— 5 months training.	1. Higher Secondary Examination or Pre-University examination or its equivalent preferably with Mathematics and Science subjects. 2. Good general education and a good social background.	*Class* 3— 3rd Army Certificate, Nursing Orderly Class 3. 2nd A. English Certificate. *Class* 2— 2 years man's service. 2nd Army Certificate. 2nd Army English Certificate. *Class* 1— 2 years man's service. 2nd Army Certificate. 1st Army English Certificate.

14	X-ray Assistant . . .	N. A.	*Class* 3— 9 months. *Class* 2— 4 months. *Class* 1— 6 months.	1. Matriculate 2. Training in Radiography	As for Sanitary Assistant Inspector.

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Number of AMC Technical Personnel Likely to Retire from service Annually from 1960-61 to 1965-66, with their Average Age at the Time of Retirement

Categories	1960-61		1961-62		1962-63		1963-64		1964-65		1965-66	
	No. due to retire	Average age on retirement	No due to retire	Average age on retirement	No. due to retire	Average age on retirement	No. due to retire	Average age on retirement	No. due to retire	Average age on retirement	No. due to retire	Average age on retirement
	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.
Dental HYG—												
JCOs	..	..	..	..	..	..	..	..	..	..	..	..
OR	..	..	..	..	..	..	..	..	3	40	3	39
RAD/X-Ray Assts.—												
JCOs	1	55	..	..	1	43	3	44	..	..	..	..
OR	..	..	1	46	4	40	1	40	13	41	22	40
B.T.Assts.—												
JCOs	..	..	..	..	..	..	..	..	..	..	..	..
OR	3	36	1	42	2	41	2	43	24	43	14	40
Lab/Tech. Assts.—												
JCOs	..	..	1	55	..	..	1	55	1	44	3	49
OR	11	49	5	40	8	41	16	41	114	41	23	39
DOR Assts.—												
JCOs	..	..	..	..	..	..	..	..	1	43	..	..
OR	2	39	6	40	8	41	6	43	20	41	5	43

Dental Tech.—												
JCOs	..	..	..	..	..	..	1	43	..	..	..	..
OR	2	39	..	..	..	..	..	..	6	43	6	40
Dispensers—												
JCOs	1	45	..	..	1	42	..	..	6	44	8	48
OR	11	43	5	47	9	46	29	41	62	42	12	43
Physiotherapy Assts.—												
JCOs	1	44	1	43	..	..	1	43	..	..	3	43
OR	3	41	2	45	5	41	16	45	24	41	8	36
M.N.Assts.—												
JCOs	..	..	..	..	..	..	..	..	1	47	..	..
OR	25	40	10	42	7	43	25	43	11	41	1	36
OR Assts.—												
JCOs	..	..	..	..	..	..	..	..	..	..	1	47
OR	19	37	9	40	19	40	24	40	78	41	9	39
SAN Assts.—												
JCOs	..	..	..	..	..	..	..	..	2	43	2	41
OR	2	36	3	43	5	40	7	46	30	43	37	39
S.T. Assts.—												
JCOs	..	..	..	..	..	..	1	44	1	44	1	43
OR	22	38	10	41	17	40	38	42	32	41	3	40

Categories	1960-61		1961-62		196 -63		1963-64		1964-65		196 -66	
	No. due to retire	Average age on retirement	No. due to retire	Average age on retirement	No. due to retire	Average age on retirement	No. due to retire	Average age on retirement	No. due to retire	Average age on retirement	No. due to retire	Average age on retirement
Nur. Assts.—												
JCOs	6	44	1	45	2	43	5	43	26	43	18	43
OR	306	40	225	41	140	42	66	42	214	41	124	40

Abbreviations

Dental HYG	Dental Hygienist.	SAN Assts.	Sanitary Assistants.
RAD/X-Ray Assts.	Radiographer/X-Ray Assistants.	S. T. Assts.	Special Treatment Assistants.
B. T. Assts.	Blood Transfusion Assistants.	NUR Assts.	Nursing Assistants.
LAB. Tech./Assts.	Laboratory Technicians/Assistants.	JCOs	Junior Commissioned Officers.
DOR Asst.	Dental Operating Room Assistants.	OR	Other Ranks.
Dental Tech.	Dental Technicians.		
M. N. Asst.	Mental Nursing Assistants.		
O. R. Assts	Operating Room Assistants.		

Appendix B—32

A SUMMARY OF THE EVALUATION REPORT OF THE WORKING OF THE C.H.S. F. P. CLINICS IN DELHI

1. It is well known that the Government of India are very keen to encourage family plannnig movement in the country. Through their efforts a number of family planning clinics have been opened in the country, and advice on family limitation is being provided in a number of dispensaries. The knowledge that it is possible voluntarily to limit fertility through the use of contraceptives has recently increased among the educated and urbanised people. However, it is not enough to know that the number of family planning clinics is increasing in the country and the number of patients to these clinics is also growing. It is more necessary to know the extent to which different groups of people use family planning methods and the effectiveness with which they do so.

2. A complete appraisal of the work of the birth control clinics will necessitate a detailed evaluation of the influence of these clinics in reducing pregnancies and also in promoting family welfare. That is, it would be necessary to study the role of family planning clinics in promoting the health of married couples and of their children, and in promoting better relations between the married partners. However, the Central problem of the present report is to evaluate the effectiveness of family planning clinics in reducing pregnancies. The effectiveness of such clinics, it may be pointed out, depends not only on the reliability of the contraceptives used but also on the clinical service and the co-operation of the patients reflected in the regularity of their use. However, a careful evaluation should also include patients' experience before clinic attendance as well as after clinical instructions. A study should also be made of the experience of those patients who reject the clinic prescription along with a study of those who continue to accept clinic advice. The present report contains the evaluation report of the C. H. S. family planning clinics in Delhi numbering 8. The main objectives is to find out the socio-economic and demographic details of the patients of the various family planning clinics, and also the physiological, clinical, and demographic effectiveness of various contraceptives.

3. This report is based on a study of the Case Cards and the Follow-up Cards relating to the visitors to the various family planning clinics. When the patient comes to the clinic for family planning advice, the social worker attached to the clinic fills a Case Card. When the social worker either goes to the house of the patient or the patient visits the clinic subsequent to the first visit, some additional information is recorded in another card called

the Follow-up Visit Card. The data contained in these two types of cards were made available to us and our study is based on the information contained in these cards.

4. The present report studies the patients to the eight family planning clinics run under the Contributory Health Scheme of the Government of India. At the time of our enquiry (July, 1958) a total of 7493 patients had been admitted to these clinics. Out of these we could obtain data for only 6134 patients. Unfortunately, all of them could not be included in this study and 222 cases had to be dropped for their cards were very incompletely filled. Even in the case of the 5912 patients studied in this report, it has not been possible for us to give details relating to all on all the points. If we had studied only those patients for which complete and full information was available, we would have unduly reduced the size of our population. We hope that by presenting the information on different points for only those of the 5912 patients for which information was available, we are not prejudicing our results.

Table 1

Number of Patients to the Clinics

Name of the C.H.S. Clinic	Approximate number of Case Cards registered in the Clinic upto 30th June, 1958.	Number of case Cards copied out by our investigators (according to the availability of the Cards at the time of investigation.	Number of Case Cards being studied in th- paper
1. Chandni Chowk	1,267	8,381	820
2. Karol Bagh	1,600	1,584	1,565
3. Lodi Colony	1,250	1,204	1,150
4. Minto Road	750	638	594
5. Roop Nagar	353	353	350
6. Vinay Nagar (East)	508	489	480
7. Vinay Nagar (Main)	600	3,882	351
8. Willingdon Hospital	1,165	6,403	602
All C. H. S. Centres	7,493	6,134	5,912

1. The first 350 Case Cards could not be included in this study because the data contained in them was very incomplete.

2 & 3. Our investigators collected information only from those files which were made available to them at the time of investigation. No purpose selection has been made.

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II. Socio-Economic Characteristics of the Patients

5.0. The patients were drawn from the moderate income groups of the working and the middle classes. The mean family income of the patients was nearly rupees 214 per month. 1625 patients out of a total of 5649 had a monthly family income between Rs. 101—150, 1097 between 151—200 and 1294 between Rs. 201—300 per month. Only 6 patients were unemployed and had no income.

5.1. The patients were mostly women who either on their own initiative or through persuation by the clinic staff had come to the clinics for advice. They were mostly literate (4849 out of a total of 5455 for which information was available that is 88·9 per cent females were literate) and 4442 out of a total of 5048 had attended a school. 1725 had studied upto middle school, that is had eight years of schooling, 1514 had studied upto higher secondary school and 365 had been to a degree college or an university.

5.2. Data relating to caste and religion of the patients was not available. However, on the basis of the information on mother-tongue, it can be said that all of them were Hindus and Sikhs. Out of a total of 5492 patients for which information on mother-tongue was available, 2508 spoke Punjabi, 2273 Hindi, 158 Sindhi and 150 Bengali. The predominance of Hindi and Punjabi speaking patients in these clinics is not surprising because 94·4 per cent inhabitants of urban Delhi speak these two languages.

* * * *

6.5. The average age of the women patients at the time of their first enrolment to these clinics works out to 27 years and of their husbands 32 years. Nearly 70 per cent females were enrolled when they were below 30 years of age. Nearly eighty per cent males were enrolled while their ages ranged between 25-39 years. The average age of first enrolment of males comes to 32·4 years, about 5 years higher than those of females. This difference is due to the difference in the respective ages of the husbands and wives.

6.6. The average duration between the consummation of marriage and the age at the time of first enrolment has been called by us the marriage-duration. This was 9·62 years for the group of women studies. 62 per cent patients had their marriage duration ranging between 5 to 14 years and only 18·5 per cent above 14 years. Slightly about 19 per cent women had a period of less than 4 years.

6.7. The frequency of coitus is of great significance in the study of reproduction and fertility. It reflects the intensity of sexual desire which otherwise is difficult to express quantitatively. The coital frequency is known to vary greatly among groups of individuals, as also from individual to individual. It has been found to change with the age of the spouses and is also influenced by their socio-economic status*. It is also influenced by biological and psychological factors the married couples. The average frequency

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*See, Pearl, Raymond : *The Natural History of Population* New York, Oxford University Press, 1939, pp. 6,-68.

of coitus reported by the patients attending these clinics comes to 4·5 per months.

It is clear that the frequency decreases somewhat with an increase in the duration of married life. It is, roughly 7 per month for couples recently married, that is, married for less than two years, and decreases systematically to 3:3 per month for couples married for 25 years or more. It is our feeling that the above figure of coital frequency is an under-estimate.

6.8. The average number of children born alive to women before they were enrolled was 3·6 while the average number of children living at the time of enrolment was 3·2. Considering the total reproductive performance including still births and abortions, these women had on an average 4·1 pregnancies. Nearly two-thirds women had between 2 to 4 living children when they first visited the cilincs. 90 women reported as having no child and another 222 stated that they had more than 6 living children.

6.9. On an average the number of pregnancies per 100 years of married life was found to be 42. This number increased to 63 when the gestational and puerperium periods were excluded from the duration of married life. In other words, the pregnancy rate for this group of women before they enrolled at the clinic was 63 per 100 years of exposure.

IV. Prevalence of Contraceptive Practice before Clinic Attendance

7.0. An important finding of the studies made by Pearl, Stix and Notestein, and Beebe** is that group differences in human fertility are due mainly to differential prevalence and effectiveness of contraception, rather than to differences in the fecundity of females. The studies showed that the prevalence and the effectiveness of contraception has a direct relationship with socio-economic status, and that even the simple and untutored methods are highly effective in reducing pregnancy rates. Our findings also show this.

7.1. Of the total of 5912 patients studied by us only 3424 or 58 per cent had practised one or more methods of contraception before clinic attendance, and 2488 or 42 per cent had not used any.

7.2. Among the methods reported as having been used, Condom was the most common. Of the total 5912 patients who had attempted some methods of contraception, 1929 or 56 per cent had used condom either alone or in combination with some other methods.

**See, Pearl Raymond, *The Natural History of Population*, Stix, Regine K and Frank W. Notestein, *Controlled Fertility*, Baltimore; The Williams and Wilking Company, 19 0; and Beebe, Gilbert W. : *Contraception and Fertility in the Southern Appalachians.* Baltimore, the Williams and Wilkins Company, 1942.

It may be pointed out that 2310 females used only one method, 553 two of the above methods combindly and 67 three of the above methods. After condom, withdrawal had been most commonly practised. The use of Diaphragm and Jelly and foam tablets did not enjoy much popularity among this group of patients as only 434 patients ever attempted these methods. The use of condom before clinic attendance by the largest number of patients shows that the method has a strong appeal to the "untutored contraceptor". This is perhaps an expression of the preference for a method which is considered "most simple and most *generally available* of any of the more effective birth control measures, mechanical or chemical".

7.3. Our findings show that a direct relationships exists between contraceptive practices and the socio-economic status. We found that practice of contraception was statistically significant by the education of the wife and husband, occupation of the wife and husband, and family income. The more-educated patients with higher income and employed as officers were found to be practising contraceptives more than the others.

7.4. If we look to the differences in the contraceptive practice by the ages of the patients, duration of their married life, and the number of their children living at the time of enrolment, we find that comparatively older patients with a large number of living children and a larger duration of married life were using contraceptives more than the others.

7.5. In all 1359 couples responded to the question relating to the regularity of the use contraceptives before clinic attendance. Of these, 598 (44 per cent) reported that they had "always" practised the method, 135 had "usually" practised and 626 had used "sometimes". Smallness of sample does not permit us to make a comparative study of various contraceptives by the regularity of their use, but it appears that diaphragm and jelly were used more regularly.

7.6. It may be of interest to point out that diaphragm and jelly as a contraceptive method before clinic attendance was liked most by the university and college educated patients whose monthly income was above Rs. 300 per month, and who belonged to the officers class. In other words, the most literate and rich patients used diaphragm and jelly. This should normally be so, for it is most expensive of the other two methods discussed in this report, namely, condom and withdrawal. Condom was used mostly by higher secondary school passed patients, with a monthly income ranging between 151 to 300 rupees per month, and who belonged to the non-officer and lower group of occupations. Withdrawal, was

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*See, Dickinson, R. L., *Techniques of Conception Control,* Baltimore Williams and Willkin sons Co. p. 24 than either withdrawal or condom.

used mostly by the illiterate and primary class passed patients, having a monthly income below Rs. 150 per month and belonging to the non-official and lower classes of occupations.

7.7. 1597 patients answered the question relating to the use-satisfaction of different contraceptives before clinic attendance. Of these 1215 patients (76 per cent) admitted that their experience with various contraceptives had not been satisfactory and only about 24 per cent were satisfied with the methods they had practised. Among different methods used, diaphragm and jelly was most satisfactory and withdrawal the least.

8.0. *Effect of Pre-clinic Contraceptive Practice of Fertility.*—For finding out the effect of pre-clinic contraceptive practice of fertility, we have compared the experience of women who *never* practised contraception with the experience of women *when* no contraception was used. Almost all the patients who reported to have used contraception prior to their clinic attendance had periods of contraceptive and non-contraceptive experiences. The measure used for comparison is the pregnancy rate estimated by the number of pregnancies per 100 years of exposure and calculated by the following formula :

$$\text{Pregnancy rate} = \frac{\text{Number of pregnancies} \times 100}{\text{Exposure in years}}$$

In the calculations, a period of 10 months for each live and still birth, 4 months for each abortion and 6 months for each pregnancy which had not yet terminated or for which the nature of termination was not known have been deducted from the marriage duration of each woman. The "number of pregnancies" include all pregnancies, whether they had terminated as live-births, still births, or abortions, or had not yet terminated.

8.1. Of the 1273 patients who could be studied, the total marriage duration for the non-contraceptive period worked out to be 9149.6 years, and the period of exposure to be 6150.9 years. During the period of non-contraceptive use the women had a total of 3794 pregnancies. The pregnancy rate works out to be 61·68 for 100 years of exposure. This compares favourably with the pregnancy rate of 65·2 for those women who never used any contraception before clinic attendance. For the contraceptive period, these 1273 women had a total of 5411.3 years of married life out of which they remained exposed to pregnancies for 4292.6 years. During this period they had a total of 1515 pregnancies. The pregnancy rate thus works out to be 35.29 years. Thus even without clinic service, the patients were in a position to reduce their pregnancies by nearly 42.8 per cent by the use of contraceptives.

V. Clinic Service and Couple Cooperation

9.0. It has been stated in the above para that the pre-clinic attempts at family limitation had been successful in limiting pregnancies by about 43 per cent. Thus reduction, though significant, is not enough because with good clinic service and satisfactory cooperation by the patients, pregnancy rates can be reduced much more. In order to achieve this, it is necessary that the clinic service is good and efficient and the patients are also cooperative.

9.1. The method of prescribing contraceptions in the clinics was that first the patient was interviewed by the health visitor or the social worker who recorded her fertility history and other details. After a thorough medical check-up by the doctor, she was instructed in pelvic anatomy by means of a model. She was shown the various contraceptives available in the clinic and the way in which these were to be used. The contraceptives generally stocked in the clinic were the diaphragms (all types of diaphragms, cervical caps or check passeries), jelly, condom and foam tablets. In addition, instructions were also given in the rhythm method of family limitation and in case the couple wanted sterilization, the clinic services were made available for arranging vasectomy or salpingectomy. After the patient had been explained the different methods of contraception, she was asked to consult her husband and point out if she had preference for a specific methods. We were told that the couple's choice of a method, if any, and the structure and functions of the woman's genital organs largely determined the type of contraceptions prescribed. Diaphragm, for instance, could not be fitted to women who had some abnormality in the pelvic anatomy, even though they had indicated their liking for this method. Such women, therefore, had to be prescribed one of the alternate methods available in the clinic.

9.2. Of the 5912 patients covered in this study, only 3522 had been prescribed a contraceptive in the clinic till December 31, 1958* and the remaining 2390 were not advised any method. A study of the reasons for not prescribing any contraceptive to these women shows that in 27 per cent cases, no contact was made with the patients after their first visit to the clinic. We feel that this loss of contact was largely due to the lethargy of the clinic staff. Another 3·7 per cent were lost because their houses could not be located and another 10·3 per cent for they had shifted to another locality. All these combindly account for 41·0 per cent loss. We think that with greater consciousness towards their duty, the clinic staff could have substantially reduced this loss. 12·8 per cent of the women reported that they were satisfied with their own methods and therefore did not need clinic advice, and another 12 per cent were found to be pregnant. 10·8 per cent patients enrolled at the clinic did not want the clinic advice because they were not interested in family planning. If 2·5 per cent women who needed more persuation and another 12·8 per cent who seemed satisfied with their old method are added to the 10·8 per cent patients who were not interested in family limitation, then it can be said that the loss of 26 per cent patients was because they could not be persuaded by the clinic staff.

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*We undertook the follow-up study till December 31, 1958 from the clinics and remaining presumably from the market.

9.3. The contraceptive most commonly prescribed was diaphragm and jelly. In nearly 78 per cent of the cases, this method was prescribed. Condom either alone or with some other contraceptive was prescribed to nearly 17 per cent patients. A total of 86 patients were suggested vasectomy or salpingectomy. Out of these the operation was performed in the case of 58 patients. In the case of 14 patients no operation was performed and in another 14 cases no information was available.

10.0. Out of the 3522 patients who were advised a method, 3436 were prescribed a contraceptive and 86 were cases of vasectomy and salpingectomy. Out of these only 2578 patients (75.0 per cent) responded and used the prescribed contraceptive. If we exclude 681 patients who never used the prescribed contraception, the response percentage increased to 93·6. Out of those who responded to use the prescribed contraception, 82·5 per cent purchased it.

10.1. Of the 86 patients who were advised vasectomy and salpingectomy, 14 did not follow the advice. Of the 681 who were prescribed a contraception, 215 did not like the prescribed method, 99 were indifferent and the remaining did not follow the advice for various other reasons.

11.0. It is customary to distinguish between the "regular" and the "non-regular" use of the prescribed contraception in order that the "method failures" might not include failures due to the omissions or errors of technique on the part of the couple. This is despite the limitations so aptly described by Tietze that the "experience has shown that couples will often claim complete regularity in the use of contraception so long as everything goes well, but will admit one or more omissions after conception has occurred. This need not be deliberate concealment of the truth to avoid embarrassment, but may be self-deception on the part of the honest and co-operative people. Furthermore, it is not always certain that conception actually took place at the time of the admitted omission and not at some other occasion."†

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†See Christopher Tietze, M. D. : The Clinical Effectiveness of Contraceptive Methods. (Preliminary Edition). New York National Committee on Maternal Health, Inc. Publication No. 1. p. 3.

11.1. Of the patients who were prescribed a method, 28.4 per cent had never used the prescribed method. As many as 60·3 per cent had reported that they had practised the method "regularly" while the remaining 11·3 per cent had practised only "irregularly". It will be observed that those prescribed diaphragm and jelly were more regular in their use of the prescribed methods than others.

12. The "favourable" response to the prescribed methods was very high, it being 91 per cent. There was no marked difference in "favourable" response by different methods prescribed. However, the data cannot be taken at its face value. The reaction of the patients to the various prescribed methods has not been recorded in a manner which would have enabled us to make a satisfactory study. We feel that a casual enquiry regarding the response of the patients is not likely to bring out the *true* reaction of the patients. The patients might feel obliged to the clinic staff and may not come forward with their true opinion.

VI. Contraception Effectiveness After Clinic Attendance

13.0. In a study of the type we have made, it is extremely important to evaluate the use-effectiveness of a given method, it may be out, is known to differ for different patients and is affected by such factors as the degree of motivation, native intelligence, educational achievement and other socio-economic factors of the users.

13.1. The major statistical tool employed for the measurement of the effectiveness of the prescribed contraceptives is the pregnancy rate per 100 years of exposure.* For the computation of this rate information is required on the (1) duration of exposure to pregnancy when the prescription was used, and (2) the number of pregnancies which occurred accidently during such periods of use.

13.2. The duration of exposure to pregnancy was determined by deducting from the total period of use (regular or irregular) those months during which conception was not possible. The pregnancies taken, were those which had been confirmed either by clinical examination or by subsequent follow-up by the field staff. The months of exposure and the pregnancies of all women were added and the pregnancy rate (P.R.) was computed by the following formula :

$$\text{P. R.} — \frac{\text{Totals number of accidental conceptions} \times 1200}{\text{Total month of exposure}}$$

14.0. As has been said earlier, a large majority of the patients were prescribed diaphragm and jelly. The second method most commonly prescribed was diaphragm and condom. The pregnancy rates for only these two methods have, therefore, been calculated.

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*The analysis for measuring the clinic effectiveness of diaphragm and jelly and condom and jelly is largely based on Christopher.

14.1. Diaphragm and jelly was prescribed to a total of 2751 patients. Out of these 541 patients never used it and the experience of another 689 patients could not be studied due to incomplete information. Thus the experience of only 1521 patients could be studied.

14.2. The 1521 patients used the above prescribed method for a total period of 12003 months. Thus the average period of use per patient works out to be 7.9 months. Out of the 1521 patients, only 872 patients used the prescribed method for a period of four or more months and for these patients, the average period of use works out to be 13.4 months.

14.3. The pregnancy rate for the entire period of use for all the 1521 patients works out to be 10:1 per 100 years of exposure. This is highly satisfactory as is evident from the following table.

Tietze : *Recommended Procedures for the Study of the Clinical* Effectiveness of Contraceptive Methods, 1958, Publication No. 2, New York.

TABLE 2

Pregnancy Rates for Diaphragm and Jelly

Authors	Area	Pregnancy Rate
Dames and Beebe (1938)	Philadelphia	6
Beales (1938)	New York	7
Stix (1939)	Cincinnati	9
Stix and Notestoin (1940)	New York City	9
Von Friesen	Sweden	8
Beebe and Overton (1942)	Nashville	9
Dubrow and Kuder	New York City	9
Garvin (1944)	Spartanburg	11
Stix (1941)	Spartanburg	13
Beebe and Belaval (1942)	Puerto Rico	29
Teitze and Alleyne	Barbados	17
Gamble	India and Pakistan	21
S. N. Agarwala	Delhi	10·1

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14.4. A total of 451 patients were prescribed condom and jelly. Of these 108 patients never used the prescribed method and another 143 patients could not be studied due to incomplete data. This leaves us with 200 couples who used condom and jelly for a total period of 1609 months, or an average of 8 months per patient. 126 couples out of the 200 couples used the prescribed method for periods of 4 and more months and their average period of use comes to 12.3 months.

14.5. The 200 patients who used condom and jelly for a total period of 1609 months had a total of 20 accidental pregnancies. The pregnancy rate for 100 years of exposure to pregnancy comes to 14.9. This is higher than for diaphragm and jelly for which we obtained a pregnancy rate of 10·1.

14.6. It may be pointed out that we have calculated above (Para 14.0 to 14.5) clinical effectiveness or use-effectiveness of diaphragm and jelly and condom and jelly. Clinical effectiveness is the measure of protection achieved by a group of patients using the contraceptive more or less consistently and with more or less care and skill. This measure reflects the physiologic effectiveness, but is modified by the nature of the human population concerned.

15.0. *Demographic Effectiveness.*—Demographic effectiveness is a measure primarily employed to evaluate clinic service, that is, the influence of clinic services on the reproductive performance of the patients and the effectiveness of the efforts by the patients at contraception. The measure reflects "clinic effectiveness plus all those factors which may promote or discourage continued reliance on the method, including the availability of acceptable alternate forms of contraception". The influence of the clinics on the patients depends on a variety of factors like the training given, physiological and phychological characteristics of the patients, the marital relationship of the patients, urgency of the need for contraception, prior knowledge and experience with contraception etc.*

15.1. A total of 3522 patients were prescribed a contraceptive method. The demographic effectiveness takes into account the post-clinic experience of all patients, irrespective of the fact whether they were actively using the prescribed method, or had abondoned its use or had never used it. These women remained exposed to 28055 months and had a total of 295 pregnancies. This gives us a pregnancy rate of 12·6. This compares favourably with the experience of the Western countries.

15.2. It is interesting that the pregnancy rates of the patients high up in the socio-economic status is lower than of those not so fortunately placed. For instance, the pregnancy rates of the patients educated to the higher secondary school level or above, having a monthly income of more than rupees 200 and belonging to the officers class had lower pregnancy rates than others. The following table gives some details.

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*Stix and Notestein, op. cit., p.3.

TABLE 3

Characteristics	Pregnancy Rate
ALL WOMEN	12.6
I. *Education of Women*—	
High School and above	10.0
Below High School	14.4
II. *Family Income* (Monthly)—	
Rs. 201 and above	10.9
Upto Rs. 200	14.1
III. *Occupations of Husbands*—	
Officers and Professionals	9.7
Non-officers (clerks etc.) and others	13.6

Conclusions

16. The success of a family planning programme is to be measured by comparing the pregnancy rate before contraception use and after it, and effectiveness of the clinic service by comparing the pregnancy rate of the pre-clinic-contraception-use-period with the post-clinic contraception-use period. A study of the C. H. S. clinic patients of Delhi has shown that the pregnancy rate for the non-contraception-use-period ranges between 62 to 66 for contraception-use-period without clinic service is 35.2, and for the post-clinic contraception-use-period 12·9. The performance of the clinics compares favourably with that of other countries.

Appendix B—33

STATEMENT SHOWING IMPORT AND PRODUCTION FIGURES IN RESPECT OF CERTAIN ESSENTIAL DRUGS FOR THE YEARS 1958, 1959 AND 1960.

Name		Import	1958 Production	Total	Import	1958 Production	Total	Import	1958 Production	Total
I *Antibiotics*—										
Penicillin . . .	M.M.U.	26.93	21.53	48.46	21.08	28.07	49.72	20.077	40.00	*60.077
Streptomycin . . .	Tons	34.910	..	34.910	65.550	..	65.550	79.00	..	79.00
Totracyclines . . .	Tons	2.13	2.40	4.53	2.93	1.89	4.82	5.00	3.4	8.4
Chloramphonicol . .	Tons	5.28	2.03	7.31	9.96	2.90	12.86	18.556	3.5	22.056
II *Sulpha Drugs* . . .	Tons	562.19	145.37	707.56	703.150	105.40	808.55	895.5	137.5	1033.00
III *Vitamins*—										
Nicotinic acid and amide . . .	Tons	25.03	0.31	25.34	48.54	3.3	51.7	43.00	0.04	43.04
Vitamin C . . .	Tons	55.00	..	55.00	65.43	..	65.43	67.0	..	67.0
Vitamin B-12	Kgms	7.169	..	7.169	12.947	..	12.947	9.8	1.2	11.00
IV *Hormones*—										
A.C.T.H.	M.U.	1.00	..	1.00	1.364	..	1.364	1.18	..	1.18
Insulin	M.U.	411.00	..	411.00	521.00	..	521.00	546.00	..	546.00
V *Anti-Tuberculosis drugs*—										
Isoniazid	Tons	0.57	18.87	19.440	0.535	26.50	27.035	1.00	27.00	28.00
P.A.S. & Salts . . .	Tons	71.04	66.09	137.130	43.033	77.6	120.633	168.00	80.00	248.00
VI *Antileprosy drug*—										
Dapsone	Tons	1.66	2.45	4.11	3.00	4.00	7.00	1.8	7.2	9.00

Name		1958 Import	Production	Total	1959 Import	Production	Total	1960 Import	Production	Total
VII *Oral Antidiabeties*—										
Carbutamide and Tarbutamide.	Tons	5·80	..	5·80	8.00	..	8.00	19.00	0·5	19·5
VIII *Antipyrotics, analgesics and sedatives*—										
Aspirin	Tons	413·00	..	413·00	171.00	17·5	188·5	128.00	59·00	187.00
Sodium Salicylate . . .	Tons	2·4	162.00	164·4	1.00	239·00	240.00	0.410	243·3	243·71
Phenacetin	Tons	185.00	..	185.00	112.00	15.00	127.00	196.00	14.00	210.00
Barbiturates	Tons	7·34	..	7·34	8.00	..	8.00	7·9	..	7·9

*This figure is not quite accurate because some imports made by M/s. Hindustan Antibiotics Ltd., under note-pass procedure are no treflected. A more correct estimate of the present consumption would be 80 million mega units.

Appendix B—34

STATEMENT OF IMPORT OF ESSENTIAL DRUGS FOR THE YEAR 1960-61.

Sl. No.	Name of the Drugs	A/U	Quantity Imported	Value of Drugs imported in Rs.
1	2	3	4	5
	Anessthetics and Analgestics			
1	Chloral Hydrate		Nil	Nil
2	Chloroform			
	(a) Anaesthetic	Kgm.	3,760.00	19,918
	(b) Pure	,,	117,390.56	2,71,837
3	Antiepileptic drugs.			
	(a) Hydantoin & derivatives	,,	1,501.75	84,151
	(b) Others	,,	Nil	Nil
4	Opium and its alkaloids.			
	(a) Morphine		Nil	Nil
	(b) Aethyl Morphine Hydrochloride (Dionin) (Prepn.)	Gm.	204.5	1,249
	(c) Injection Morphine	,,	1.06	108
	(d) Codeine and its salts		Nil	Nil
	(e) Papavarine	Kgm.	460.8264	44,712
	(f) Injection Papavearine, B.P.C. or equivalent	Gms.	286.4	1,819
5	Pethidine Hydrochloride B.P.			
	(a) Powder	Kgm.	186.950	35,169
	(b) Injections		Nil	Nil
	(c) Tablets	Kgm.	0.260	133
6	Procaine Hydrochloride	,,	28700.200	4,33,198
7	Dental Anaesthetics	..	Not available	4,07,119
	Bulk	,,	18.2	8,345
	Prepn	,,	13.2	48,781
	Antibiotics			
8	Chloramphenicol Bulk	,,	19,146.938	65,90,378
	Prepn.	,,	69.500	2,77,128
9	Chlortetracyclin Bulk	,,	2,126.000	22,88,935
	Prepn.	,,	150.810	11,21,130
10	Oxytetracylin Bulk	,,	997.8430	15,43,204
	Prepn.	,,	51.9544	7,73,440
11	Penicillin Preparations—			
	(a) Penicillin G. Sodium or Potassium Crystalline	M.U.	21,395,693.860	24,17,340
	(i) Penicillin 1st Crystals	,,	12,403,649.180	10,69,050

1	2	3	4	5
	(b) Penethamate Hydroiodide .	,,	232,586.726	1,30,238
	(c) Benizathine Penicillin . .	,,	Nil	Nil
	(d) Benethamine Penicillin .	,,	599,015·940	1,91,376
	(e) Phenoxymethyl Penicillin (Penicillin V) . .	Kgm.	429.043	1,39,121
	(f) Penicillin Procaine G, in oil	M.U.	655,077·000	2,05,476
	(g) Penicillin Procaine G. .	,,	3,322,516.340	4,60,471
12	Streptomycin—			
	(a) Streptomycin Sulphate .	Kgm.	46,004.000	64,16,926
	(b) Dihydro-streptomycin Sulphate	,,	49,316.998	67,02,507
	(c) Calcium Chloride Complex		Nil	Nil
	(d) Other Streptomycin Preprations	,,	33·0 N.A.	55,024 44,100
13	Tetracycline Bulk . .	,,	1,313·660	13,32,117
	Prepn. . .	,,	58.129	5,75,929
	Anti-Leprosy Drugs			
14	Dapsone (Dedps) and its derivatives Bulk . .	,,	1,871.36	46,501
	Prepn. . .	,,	55·75	13,673
15	Selapsone B. P. C. and derivatives	,,	510.00	28,286
16	Sulfexone Sodium U.S.P. (Diasone)	,,	49·50	8,216
	Anti-Malarials Drugs			
17	Amodiaguin	,,	344·0	98,330
18	Chloroquin and its salts. Bulk .	,,	6,702.71	6,66,589
	Prepn. .	,,	2,684.00 N.A.	5,22,380 1,58,931
19	Primaquine Prepn. .	,,	110.0 N.A.	2,71,422 59,334
20	Proguanil Hydrochloride B.P. Bulk	,,	2,362.0	2,22,553
21	Quinine and its salts	,,	Nil	Nil
	Anti-Tubercular Drugs			
22	Isonicotinic acid hydrazide (Isoniazid)	,,	2,163.847	80,967
23	(a) Para-Amino Salicylic Acid (Pas)	,,	50,118.900	8,73,100
	(b) its sodium and calcium salts Bulk . .	,,	1,42,906.300	21,40,433
	Prepn. . .		95·025	14,440
	(c) its compounds with Isonicotrinic and hydrazide . .		Nil	Nil
24	Chemical Contraceptives . .	,,	1,171.2 N.A.	17,890 1,86,315

1	2	3	4	5
	Diuretics			
25	Caffeine and its salts . . .	Kgm.	21,903.04	3,82,121
26	(a) Mersalyl B.P. . . .	,,	Nil	Nil
	(b) Mersalyl Acid B.P. Bulk .	,,	99.5	11,150
	(c) Other Mercurial Diuretics .	,,	7.0	10,800
	(d) Other Non-mercurial diuretics.			
	(i) Chlorthiazide . .	,,	Nil	Nil
	(ii) Hydranlorthbacide Bulk .	,,	276.888	1,28,157
	(iii) Hydroflumathiazide Bulk	,,	170.000	2,62,149
	Prepn.	,,	10.800	28,862
	(iv) Amino Phylline Bulk .	,,	6465.86	1,18,207
	Prepn. .	,,	1,176.444	55,776
	(v) Acetazolamide Bulk .	,,	411.0	2,20,208
	(vi) Others Bulk .	,,	5,528.770	1,75,023
	Prepn. .	,,	54.500	38,031
	Drugs of Vegetable Origin			
27	Digitalis leaf and its glycoside .		Nil	Nil
	(a) Digoxin Bulk . .	Gm.	9,276.70	3,61,624
	Prepn . .	,,	1,002.15	37,575
	(b) Digitoxin Bulk .	,,	212.70	3,125
	(c) Digitalin Prepn. .	,,	44.80	10,562
28	(d) Lanatosides Prepn	,,	616.316	91,895
	(e) Other glycosides of Digitalis	,,	150.0	400
29	Emetine Hydrochloride . .	Kgm.	2.815	12,594
30	Emetine	,,	7,377.600	3,99,766
31	Ergot and its alkaloids			
	(a) Ergot of Rye & its preparations Bulk	,,	12,202.47	1,22,487
	Prepn. .		1,095.00	58,401
	(b) Alkaloids of Ergot and their Prepns.	Gm.	1.9 N.A.	138 10,00,639
	(c) Composit Prepns. of Ergot Alkaloids	,,	N.A.	2,12,167
32	Rauwolfia Serpentina ; its alkaloids ; their preparations . . .	Kgm.	2,205.0	6,691
33	Santonin	,,	Nil	Nil
34	Strychinine	,,	Nil	Nil
	Endocrines			
35	(a) A. C. T. H. (Adreno Corticotropic Hormone) . .	I.U.	7,87,220	65,322
	(b) Cortisone & Hydrocortisone including their derivatives. Bulk	Kgm.	49.319	2,33,845

1	2	3	4	5
	(c) Dexamethasone Bulk .	,,	4.1568	7,45,709
	Prepn.	,,	0.0465	24,711
	(d) Prednisone & Predinsolone including their derivatives. Bulk .	,,	120.9870	10,61,000
	(e) Triamcinolone Bulk . .	,,	2.756	3,31,713
36	(a) Adrenaline and salts . .	,,	8.482	5,865
	(b) Other related products .	,,	146.965	1,11,232
37	Insulin and preparations thereof.			
	(a) Globin insulin Prepn. .	M.U.	0.5248	3,593
	(b) Protamine Zinc insulin			
	Bulk .	,,	8.0000	17,342
	Prepn .	,,	5.4450	17,512
	(c) N.P.H. insulin Prepn.	,,	40.6790	3,21,751
	(d) Isulin Lente Bulk	,,	124.5200	3,48,872
	Prepn.	,,	40.2530	2,48,442
	(e) Insulin other forms (Bulk & Prepns.)			
	(i) Insulin Crystallin Plain Bulk .	,,	239.23	4,81,502
	(ii) Recrystall Prepn. . .	,,	6.019	61,004
	(iii) Recrystalline Insulin Plain Bulk .	,,	25.000	41,667
	Female Sex Hormones			
38	(a) Oestradiol & its derivatives and their preparations. Bulk .	Kgm.	4.6055	57,185
	(b) Ethisterone Bulk .	,,	33.609	62,145
	(i) Non Ethisterone Acetate .	,,	1.286	1,02,880
	(c) Progesterone Bulk .	,,	50.429	1,50,758
	(d) Stilboestrol Bulk .	,,	27.070	15,712
39	(a) Pituitary Posterior Lobe Extract	Lits.	328.08	2,61,274
	(b) Pituitary Seals and Powder	M.U.	9.04	10,583
	Male Sex Hormones			
40	(a) Testosterone & its esters. Bulk	Kgm.	64.459	1,55,039
	(b) Methyl testosterone. Bulk	,,	39.837	53,867
41	Thyroid	,,	646.060	21,364
42	(a) Other Hormones and Hormones intermediates. Bulk .	,,	603.435	17,30,575
	Prepns.	,,	1.1882	2,13,561
		M.U.	39.4	1,27,945
	(b) Combinations of Hormones		Nil	Nil

1	2	3	4	5
	Heamatinics			
43	(a) Crude Liver Extract . .		Nil	Nil
	(b) Refined Liver Extract . .		Nil	Nil
	(c) Preparations of Iron salts and collodial iron	Kgm.	76.0	2,53,334
		,,	N.A.	70,882
44	Ferrous Fumerate Bulk . . .	,,	7,520.27	96,904
45	Ferrous Succinate Bulk . . .	,,	698.0	19,691
	Prepns. . .	,,	29.22	5,002
46	Adenosine	,,	3·593	19,872
47	Agar	,,	5,986.610	1,32,480
48	Anti-histaminic drugs . . .	,,	4,435·545	19,51,561
49	Argenti Protenium (Silver Protein) .	,,	527.665	25,471
50	Arsenicals (for syphillis) Bulk .	,,	116.500	6,572
	Prepns.	,,	179·787	3,22,441
51	Arsenicals(not for syphillis) . .	,,	1,327.81	1,03,027
52	Aspirin	,,	114,640.67	6,32,250
53	Bilesalts	,,	2,211.27	78,510
54	Bismuth salts	,,	1,783·45	1,72,332
55	*Blood Plasma & its susbstitutes*			
	(a) Dextrane Bulk	,,	100.00	12,064
	Prepns. . . .	Lits.	49,291·92	4,70,833
	(b) Polyvinyl Pyrroldone Bulk .	Kgm.	5,003·75	1,48,995
	Prepns. .	Lits.	10,182.10	2,01,823
	(c) Others	,,	2,026.68	25,960
56	(a) Calcium Gluconate . . .	,,	36,731.12	1,61,119
	b) Calcium Glucono Glacto Gluconate	,,	1,500.0	35,640
	(c) Calcium Lacto-Bionate . .	,,	714.65	18,247
57	Carbutamide Bulk . .	Kgm.	1,234·3	72,065
58	Chlorpromazine Bulk . .	,,	775·65	1,19,839
59	Cocaine Hydrochloride . .	,,	22·95	32,864
60	Creosote	,,	8,303·30	66,623
61	D.D.T.	,,	6,043,463·0	1,75,17,664
62	Dimathyl Carbamazine . . .	,,	3,573·85	5,89,850
63	Di-iodo-oxyquinoline . . .		Nil	Nil
64	Glucose Anhydrous or Dexotrose Bulk .	Kg.	134,262·43	2,29,866
	Prepns.	Lits.	3,114·72	15,010
65	Hexamine	Kgm.	577,658.85	14,30,662
66	Hyaluronidose	M.U.	193·613	1,24,669
67	Iodine	Kgm.	51,890.14	5,53,937
68	Iodochlorhydroxyquinoline . .		Nil	Nil
69	Ipecac Root	,,	12,618.21	10,37,302
70	Leptazol	,,	86.0	9,560
71	Nepressal Sulphate	,,	200.0	2,84,622

1	2	3	4	5
72	Nikethamide B. P. (Coramine) and	Kgm.	92.0	4,66
	(a) Combinations with theophylline		Nil	Nil
73	Pentalinum Tartrate . . .	Kgm.	20.0	1,862
74	Phenacetin	,,	233,946.26	15,10,169
75	Barbiturates Bulk	,,	7,286.685	2,54,485
	Prepns. . .	,,	325.185	2,93,160
76	Phenindone	,,	34.91	25,226
77	Phenyl Butazone	,,	5,573.67	2,07,808
78	Potassium Iodide	,,	12,286.96	1,43,192
79	Privine	,,	13.284	3,280
80	Priscol	,,	130.0	32,230
81	Protein Hydrolystate	,,	Nil	Nil
82	Salicylic Acid	,,	175,052.42	6,53,371
83	Sodium Bicarbonate	,,	3,769,486.5	12,29,977
84	Sodium Salicylate	,,	563.48	3,541
85	Thrombin		Nil	Nil
86	Thrombokinase	,,	0.249	7,997
87	Tolbutamide	,,	12,220.75	5,69,240
88	Zinc Oxide		Nil	Nil

Sulpha Drugs

1	2	3	4	5
89	N-3, 14-Dimethyl Benzoyl Sulphanilamide (Irgafen) . . .	,,	45.0	4,344
90	Phthalyl Sulphacetamide . . .	,,	3,820.0	68,369
91	Phthalyl Sulphathiazole . . .	,,	16,769.0	3,04,137
92	Succinyl Sulphathiazole . . .	,,	6,260.0	1,42,978
93	Sulphanilamide	,,	188,247.29	12,26,602
94	Sulphamethyl Diazine (Sulphamerazine)	,,	21,669.00	6,21,817
95	Sulphacetamide	,,	3,023.00	62,832
96	Sulphademidine B.P.	,,	94,382.0	16,87,479
97	Sulphadiazine	,,	94,298.9	28,78,543
98	Sulphaguanidine	,,	260,601.5	24,57,093
99	Sulphafurazole	,,	3,400.0	4,42,778
100	Sulphasomidine	,,	18,510.0	1,115,55
101	Sulphathiazole	,,	101,344.0	16,24,950
102	Acetyl Sulphathiazole	,,	40,000.0	4,76,570
103	Acetyl Sulphadiazine . . .		Nil	Nil

Vitamins

1	2	3	4	5
104	Folic Acid	Kgm.	772.141	3,89,856
105	Multi Vitamin Preparations.			
	(a) Tablets		Nil	Nil
	(b) Liquids		Nil	Nil
	(c) Capsules		Nil	Nil

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1	2	3	4	5
106	Nicotinic Acid	Kgm.	5,171·7	80,569
	(a) Nicotinamide	,,	16,103.19	3,96,870
107	Pentathenic Acid	,,	4,398.60	7,74,657
108	Shark Liver Oil	Imp. Gallons	1,350.0	27,099
109	Vitamin A.	M.U.	1,06,5971	5,56,971
110	Vitamin B. Complex		..	
	(a) Capsules		Nil	
	(b) Injections		Nil	
	(c) Toblets		Nil	
	(d) Yeast Powder	Kgm.	86,985·365	2,96,383
	(e) Yeast Preparations	,,	6,986.706	80,993
111	Vitamin B1.	,,	14,001.800	12,94,916
112	Vitamin B2 (Riboflavin)	,,	3,208.2	4,93,164
113	Vitamin B6 (Pyridoxine)	,,	1,102.085	5,04,549
114	Vitamin B12 (Cyanocobalamine)	Gms.	8,231·179	16,91,952
115	Vitamin C (Ascorbic Acid)	Kgm.	76,934·150	23,99,072
116	Vitamin D	M.U.	2,938,489.00	2,11 946
117	Vitamin E.	Kgm.	1,018.23	3,37,267
118	Vitamin K. (Menaphthonum B.P.)	,,	249·576	76,893
119	Vitamin P (Rutin)	,,	505·5	22,017
120	Immunological Products	Lits. ..	117.0 N.A.	22,472 66,402
121	*Vaccines.*			
	(a) Diphtheria Bulk	M.U.	1,273·960	4,31,655
	Prepns.	,,	563·125	1,52,324
	(b) Tetanus Bulk	,,	1,983·300	5,35,112
	Prepns.	,,	4,033·751	13,84,925
	(c) Whooping Cough	CC	23,250.0	11,842
	(d) Diphtheria Tetanus Pertussis Prophylactie (Triple Antizen)	CC.	12,500	10,110
	(e) Other Mixed Vaccines	Lits.	117.0 N.A.	22,472 838
122	Drugs for Veterinary use	Kgm.	13,640.0 N.A.	1,12,448 4,39,056
123	Sterilized Surgical Ligature.			
	(a) Catgut	Doz.	53,210	5,33,823
	(b) Other Ligatures	,,	2,404	25,325
124	"*X-ray Diagnostic Agents.*"			
	(a) Brium Sulphate	Kgm.	38,530·3	99,72
	(b) Others	,,	36.0 N.A.	19,790 2,15,488

Appendix B—35

EXPANSION PROGRAMMES IN RESPECT OF CERTAIN ESSENTIAL DRUGS

Item	Unit	3rd plan Targets	Licensed capacity (including capacity under USSR aided Scheme)
1. Penicillin . . .	M.M.U.	120	205—(USSR 140 M.U.).
2. Streptomycin . .	Tons	150	145.18 (USSR 85 Tons.).
3. Tetracyclines	,,	50	144 (USSR 25 Tons.) (Oxychlortotracycine 95 Tons).
4. Chloramphenicol . .	,,	50	23·5
5. Newer antibiotics such as Neomycin, bactracin, crythromycin, Nystatin, etc.	,,	20	10 (for Nystatin only. (USSR 10 Tons.).
6. Sulpha drugs . . .	,,	1,000	986 (USSR. 510 Tons).
7. P.A.S. & Salts . .	,,	400	396
8. Isoniazid	,,	100	54 (USSR 20 Tons).
9. Iodo-chlor and di-iodo-oxy-quinoline . . .	,,	75	73·7
10. D.D.S. (Dapsene) . .	,,	40	18.3
11. Procaine Hcl . . .	,,	75	56
12. Barbiturates	,,	20	10 (*Luminol only*) (USSR 60 Tons)
13. Salicylic acid including requirements for Aspirin & Sodium salicylate .	,,	1,500	670
14. Aspirin	,,	800	710
15. Sod. Salicylate . .	,,	500	517
16. Phenacetin . . .	,,	200	122 (USSR 100 Tons).
17. Nikethamide . . .	,,	115	7·1
18. Antifilarial drugs . .	,,	75	30.66 (USSR 30 Tons).
19. Plasma Substitute Million litres	,,	0·5	not available
20. Oral antidiabetics . .	,,	10	42.18
21. Vitamin A . . .	M.M.U.	20	20
22. Vitamin B . . .	Tons	75	30
23. Vitamin B2	,,	10	5 (USSR 5 Tons).
24. Vitamin B6	,,	2.5	1 (USSR 1 Ton).
25. Vitamin B12 . . .	Kgms.	25	5·2
26. Vitamin C . . .	Tons	125	110
27. Vitamin D	,,	1	not available
28. Nicotinic acid and amide .	,,	75	,, ,,
29. Vitamin K . . .	Kgms.	75	,, ,, (USSR 20 tons).
30. A.C.T.H. . . .	M.M.U.	4	,, ,,
31. Pituitrin	Kgm.	30	,, ,,
32. Cartisone derivatives .	,,	500	,, ,,
33. Insulin	M.U.	1,000	,, ,,
34. Adrenaline . . .	Kgm.	50	,, ,,
35. Pepsin Pancreation .	Tons	10	,, ,,
36. Coffeine	,,	100	61.76 (USSR 50 tons).

Item	Unit	3rd Plan Targets	Licensed capacity (including capacity under USSR aided Scheme)
37. Ephedrine . . .	Tons	15	19.6 (USSR 15 Tons).
38. Digitalis glycosides . .	Kgms.	100	100 (USSR 100 Kgms.).
39. Ergot alkaloids . .	,,	50	50 (USSR 50 Kgms.).
40. Atropine . . .	,,	50	50 (USSR 50 Kgms.).
41. Scopolamine . . .	,,	10	10 (USSR 10 Kgms.).
42. Papain	Tons	10	10 (USSR 10 Kgms.).
43. Reserpine . . .	Kgms.	200	210 (USSR 200 Kgms.).
44. Vitamin P . . .	Tons	1	1 (USSR 1 Kgms.).
45. Vitamin E . . .	Kgms.	600	not available.
46. Piperazine . . .	,,	..	(USSR 50 Tons).
47. Acetazolamide . .	,,	..	(USSR 25 Tons).

Appendix B—36

SUMMARY OF REPLIES TO QUESTIONNAIRE* ISSUED TO MANUFACTURERS OF SURGICAL INSTRUMENTS AND APPLIANCES

	No. of items manufacturers	Annual Turn over (in lakhs)					Do you carry out all stages of manufacture in your factory	No. of trained personnel	Whether training facilities available	Sources of Finance	Capital in lakhs	Have you liaison with Govt. Deptt.	Do you export items
		1955-56	1956-57	1957-58	1958-59	1959-60							
No. of respondents. . .	24	18	18	18	18	18	33	21	33	33	21	33	33
Total	1218	37.622	46.723	59.162	65.233	53.826	Yes=25 No.= 5 N.A.=3	279	Yes= 9 No.=20 N.A.=4	Partners=7 Sharers=3 Proprietors=3 Pvt. Ltd.=15 Government=1 N.A.=4	267.925	Yes = 1 No. =28 N.A.= 4	Yes = 4 No. =26 N.A.=3
Average	51	2.09	2.59	3.29	3.62	2.99	—	13	..	..	12.76	..	..
Range	1–400	.360 to 8.132	.130 to 16.487	.225 to 18.692	.516 to 19.800	.598 to 18.000	..	1–45	..	..	.200 to 220.000	..	..

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*See Appendix D5(b).

Appendix B—37

BOARD OF *INDIAN MEDICINE-REGISTRATION OF PRACTITIONERS

Name of State	Is Registration compulsory	Whether Registration authority undertakes the Control of Education Standard
1	2	3
Andhra Pradesh	No.	No.
Assam	Yes, for people seeking Govt. employment.	Yes, for people seeking Govt. employment.
Bihar	No.	No.
Bombay	Yes. In urban areas.	Yes. In urban areas.
Jammu & Kashmir	..	..
Kerala	Only University.	Only University.
Madhya Pradesh	..	..
Madras	Yes.	Yes.
Mysore	..	..
Orissa	No.	No.
Punjab	Yes.	Yes.
Rajasthan	Yes.	Yes.
Uttar Pradesh	No.	No.
West Bengal	No.	No.
Delhi	Yes.	Yes.

*Includes Unani & Siddha.

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Appendix B—38

SALIENT FEATURES OF THE DRAFT MODEL PUBLIC HEALTH ACT

Part I of the Act—Organisational and Administrative provisions

1. The draft comprehensive Model Public Health Act submitted by the Committee has 57 chapters and runs over 300 typed pages. The Act covers all the aims set before it in the terms of reference. While the existing enactments lay emphasis, by and large, on the provision of sanitary services, the draft Model Act has taken full note of the modern trends in Public Health and has brought within the purview of the Act several matters untouched before in Health Legislation in India. Public Health to-day aims at the building up of a social machinery to provide for the people, a reasonable standard of Health Care in the curative, preventive, promotive and rehabilitative fields. In consonance with these trends, the draft Act has made a departure from the older Acts and has included these fields within its purview. In fact, this Draft Act aims at

being the legislative counterpart to implement fully the recommendations made in the Bhore Committee and Environmental Hygiene Committee reports and has envisaged a comprehensive and integrated Health Service covering all the essential fields. The Act, therefore, lays down statutory obligations on the Government, local authorities and the people to ensure the fulfilment of this objective.

2. Medical relief measures including the provision of hospitals, clinics, laboratories, specialists, nursing and ancillary services are proposed to be given a legal status and the standards of such provisions are laid down in the draft Act. The integration of these services with preventive care has been ensured by the legal provisions for a State Government organisational set up running from the State level down to the health centre level at the periphery, so that in the actual working, Health Care will become a co-ordinated effort. The responsibility for this organisational set up for Health Administration has been largely laid on the State Government which is the ultimate authority responsible for financing and implementing a progressive health policy in a welfare State.

3. The Local Authorities are made largely responsible for sanitation and other environmental health services. Their powers, therefore, have not been curbed. On the other hand, the provisions made in the draft Act confer greater responsibility on the Local Authorities than hitherto. The Model Act, however, provides that the State Government should have the obligation to assist Local Authorities with finance and technical advice through their specialists, so that any health programme considered as essential does not suffer for lack of funds or personnel, both of which are usually wanting in Local Authorities. With this end in view, powers are vested in the Government to supervise, supplement or take over certain essential institutions or programmes or works which Local Authorities find themselves unable to run or execute.

4. "State Health Services" are defined and listed in Schedule I. and include all basic services necessary for the promotion of positive health.

The composition of the Directorate of Health Services, its divisions and bureaus are given in Schedule II and the District and peripheral services in Schedule II.

A noteworthy feature is the statutory provision of a Division of Public Health Engineering as part and parcel of the Directorate of Health Services, with a Chief Engineer (P. H.) and District and Sub-divisional Public Health Engineering staff at the periphery. This provision is intended to step up, quickly, under proper technical guidance and control and expansion of Environmental Health Services, so badly needed in urban and rural areas.

5. Besides the State Health Administration staff, the District and Municipal Health Officers and Health Engineers are expected to form cadres of Officers of State Government with prescribed qualifications lent to these Local Authorities. Such a provision, it is considered, will ensure administrative efficiency and rapid progress of health work.

6. The Director of Health Services is vested with powers to deal immediately with emergencies endangering life or health and then report to Government. This provision is made to facilitate prompt action. He has also powers to supervise and control the Health Programme or Institutions of Local Authorities and to control the work of Local Authority Medical Officers of Health including powers for transfer and disciplinary action.

7. A provision has been included for earmarking of a minimum proportion of the income of Local Authorities for public health purposes—1/3 for Municipal areas and 1/5 non-municipal areas.

8. The State Government has been vested with powers to take over an essential health programme which could not be properly run by a Local Authority and run the same.

9. Part II of the draft Act deals with Medical Relief and Public Health Measures. Besides the legal provisions for the effective control of communicable diseases and the vesting of Health Officers with full powers therefor, this part deals with the provision of and standards for hospitals including free beds, and the rules for the management of medical institutions.

Provisions have been made for compulsory vaccination, re-vaccination and mass inoculation as an anticipatory measure and for framing of Epidemic Regulations by the State Government. The Director of Health Services has been empowered to assist Local Authorities with staff and equipment in emergencies or to take over the situation under his own control. Provisions have also been made for controlling certain non-communicable but widespread nutritional and other diseases like beriberi, epidemic dropsy, scurvy, etc. By the above provisions, several lacunae in the existing legislation are to be covered for the adequate control of wide-spread outbreaks of disease.

On the positive health side, school health and maternity and child welfare services and nutrition programmes have been provided for, partly by State Government and partly by Local Authorities.

A new feature in the draft Act is the provision for domiciliary nursing and midwifery services and for family planning services as an integral part of Maternity and Child Welfare Services, thus implementing the new policy of Government. Another new feature is the provision for institutions for the care of indigent or handicapped children. Medical social work is also provided for in connection with certain clinics and institutions with the aim of promoting after care and rehabilitation for convalescents and the aged.

Control over nursing homes and sanatoria by licensing and the maintenance of their standards are also provided for. Other new features in the Act are the provisions for Ophthalmic, Mental Health, Ambulance and Laboratory services. These provisions meet some of the hitherto untouched problems and make the Health care comprehensive and realistic.

Part III of the Act—Sanitation

10. This Part deals with the provision of Environmental sanitary services, but is much more comprehensive and informative than the older enactments. It lays down the procedure for instituting and financing water supply, drainage, housing, town and village planning, slum improvement and other schemes. While the Local Authorities are primarily responsible for instituting these schemes, State Government can also assist the implementation, or take over some of the schemes. The provisions for Health resorts and Holidays Camps are new features.

Provisions supplementary to existing Central Acts are given for food control and health of factory workers.

Part IV of the Act

11. This contains general provisions especially relating to financial matters. Power is given to Government or Local Authorities to borrow money for health projects with a view to a speedy implementation of these projects. Loans from State and Central Governments are also provided for such projects.

Specification of Standards

An outline of standards and other particulars for incorporation in the rules and by-laws to be framed by State Government or Local Authorities under the Model Public Health Act is given as an annexure to the Model Act. These incorporate the latest technical information available in respect of standards for Healthful Housing, Water-supply, sanitary works, certain licensible trades, schools, etc. This should be of great assistance to States in the actual implementation of the Public Health Act.

The Model Public Health Act thus aims at providing an effective tool for the welfare State to translate its benevolent ideas and policies of social welfare into effective administrative action for the benefit of the people. It takes into account the recent advances in medical knowledge and the recent trends in health organisation and administration, and the peculiar conditions and needs of the country.

Appendix B—39

DIPLOMA IN CRIMINOLOGY AND FORENSIC SCIENCE

University of Madras

Syllabus :

The Syllabus and the programme of lecture demonstrations are as follows :—

	Lecture demonstration
1	2
1. Criminal Pathology—By Professor of Pathology—	
(a) Inflammation	1
(b) Repair	1
(c) Shock	1
(d) Thrombosis and Embolism	1
(e) Burns, Scalds and Starvation	1
(f) Post-mortem examination	1
2. Forensic Medicine—By Professor of Forensic Medicine—	
(a) Prsonal Identity	3
(b) Medico-legal aspects of death	2
(c) Sudden death	1
(d) Asphyzial death	3
(e) Mechanical injuries	3
(f) Sexual offences	4
(g) Infanticide	1
(h) Insanity	1
(i) Toxicology (excluding Chemical Analytical Aspects) by the Director of Forensic Science	6

3. (i) Forensic Science 1 : 11 Lecture demonstrations or Seminars—

The lecture demonstrations will cover the following outline syllabus :—

Introduction.—Toxicology—Inorganic organic Poisons—Investigation in poisoning cases—Alcohol—various preparations— effects both physiological and pathological—identification at the scene of crime and at the laboratory—estimation and interpretation—Stains of all descriptions—investigation, identification and interpretation—Study of tissues—Ballisties—study of various fire arms, different types of ammunition—estimation of range—identification of bullets cartridge cases etc.—powder residues—Explosives—Country bombs—acids—identification—opinion on specification regarding pyro-technicals—nitroglycerine, dynamite, etc.—effects on human body—detection thereof—studies of electrocution—general methods of analysis and laboratory technique adopted in the Forensic Science Laboratory.

3. (ii) Forensic Science 2 : 11 Lecture demonstrations—

The lecture demonstrations will cover the following outline syllabus :—

Introduction.—Uses of physical methods in the application and study of criminalistics—Microscopy—Infrared, ultra-violet and X-ray studies—Photography—Documents—deciphering erased and obliterated writings—additions and alterations—Examination of paper and writing materials—identification of handwriting, type-writing, etc.—Restoration of filed off numbers—comparison of tool marks—stenography—on metal and other surfaces—Foot-prints—sunken and surface impressions—methods of recording—moulage—Walking pictures—comparison of foot-prints types tracts, etc.—Counterfeit coins and forged currency, etc.—Examination of dust, dirt, wood fragments, fibres, etc.—Principles of exchange—glass fragments—investigation in automobile accidents—examination at the crime scene—Collection of physical evidence—Packing and transmission of articles to the Forensic Science Laboratory.

4. Police Administration etc. : 8 Lecture demonstrations—

The lecture demonstrations will cover the following outline syllabus :—

Police Organisation.—Legal background of set up—system of Recruitment, Discipline and Appeal Rules—Punishment and Reward—Procedure.

Police Administration.—Fundamental rights under the Constitution—Man-management—Maintenance of Personal sheets—communication of entries in them—Promotion procedure.

Investigation.—Scene of crime examination—Principles of exchange—Atchesley's M.O. method—Principles of perception and testimony—examination of witnesses—law on evidence recorded in bits—records and their use—use of F.P.B., D.I.B., C.F.P.B., investigation—Co-ordination—Crime control—registers—principles of supervision—detective parties.

Finger-print.—History—Henry and Bettley system—Practical work—Special developers—use of F.P.B. in investigations.

5 and 6. Syllabus in Criminal Psychology and Sociology.—

I. *Introduction.*—(a) Nature of Society—Social groups—Social institutions—Group loyalty—Family—Caste groups—Religious groups—Role of religion in individual and social life.

(b) Dynamics of human behaviour—Biological urges—Social motives—Socialisation of biological urges—Unconscious.

(c) Conditions of mental health—Frustration—Aggression—Conflicts—Escape mechanism—Abnormal behaviour—Psychological disorders—Anti-social activities.

(d) Definition of Crime—Changing Concepts of Crime.

II. *Some factors favourable in criminality.*—(a) Physical environment—Geographical factors—Ecological factors—Rural-Urban factors—Seasonal fluctuations.

(b) Biological factors—Criminal anthropology—Endocriminology and Crime and age—Heredity—Criminal personality—Criminal tribes—Racial traits and crime.

(c) Socio-economic factors—Poverty—Unemployment Broken home conditions—cultural factors like Press and motion picture—Lack of Education and vocational sense.

(d) Psychological factors—Legal and medical Concepts of insanity—disorders like :—Paranoia—Mental defect—Kleptomania—Drug Psychoses, Psychopathy—Compusion neuroses. Suicide Mania.

III. *Diagnosis and detection.*—Psychological tests—Intelligence tests—Some personality tests—Lie detector. Problems of interrogation :—Psychology of remembering and forgetting—Assauge experiment.

IV. *Punishment and treatment.*—(a) Theories of punishment—Degrees of responsibility—Effects of various kinds of punishment.

Transporations and special colonies—Modern views—Different standards of punishment.

(b) New types of prisons—Effects of prison life on personality. Sex problems in prisons—Vocational training and prison labour—Classification of Criminals : Legal, Psychological and Sociological.

(c) Parole and probation—Special problems of women—after-care work and rehabilitation.

V. *Special problems.*—(a) Alcholins and drug addicts—Prostitution—Gambling—The sex criminal—Habitual offender.

(b) Juvenile delinquency—Children's Courts—Child guidance clinics—approved schools.

VI. *Social Education and crime prevention.*—Parent education—Adult education programmes—School as Community centres—Better recreational facilities—Social workers—Religious teachers.

7 and 8. Syllabus in Penology and Criminal Procedure Code—

The lecture demonstrations may be divided broadly into two heads :—

(1) Penology.

(2) Criminal Procedure.

I. (1) (i) *Introduction to Penal Code.*—(a) History, (b) Applicability, (c) Territorial, (d) Personal, etc.

Mens Rea—English Law and Indian Law—Preparation attempt and commission.

(ii) Definitions punishments—different kinds—history.

(2) *General Exceptions.*—Aggravation and anitigation of Crime Drunkardness—Insanity—Right of private defence—Age and Criminal responsibility.

(3) *Vicarious liability.*—Common object Sections 34, 114, 149—Conspiracy 120-B—Unlawful subjects.

(4) Offences against State Armed Forces, Public Servants, Elections, public justice, public health, religion, etc.

(5) Offences against person.

(6) Offences against property.

(7) *Local and Special Laws.*—Introduction, Applicability, Prohibition Act, Suppression of Immoral Act, Borstal School Act, Probation of Offenders Act, Food Adulteration Act.

II. (1) *Criminal Procedure.*—(1) Procedure guaranteed by the Constitution, (2) Organisation and set-up of Courts and powers, (3) Police powers—Arrest, search seizure duty of public and others, (4) Investigation by police, (5) Prevention Security and Vagrancy—Secs. 107, 118, 144, 145 and 488, (6) Initiation of Proceedings—Sanctions etc., (7) Procedure of summons, warrants and Session's cases—Procedure and police charge-sheet, (8) Appeals, Reference, Revision, (9) Bail vagers irregular proceedings—autrifies acquini—Sections 562 and 565.

III. Evidence Act, admissibility of evidence, admission, confession—Section 27, expert evidence.

IV. *General.*—The penal Code will be covered in 11 lectures and the procedure code will be covered in 11 lectures. There will be 4 lectures allocated to special and local Laws and 4 lectures for evidence act and miscellaneous.

(By order)

University Building, Chepauk Madras.
9th November, 1960.

R. RAVI VARMA,
Registrar.

Appendix B—40

PROPOSED CURRICULUM FOR B.SC. COURSE IN PUBLIC HEALTH LEADING TO FURTHER SPECIALISATIONS, M.SC. (P.H.).,D.SC. (P.H.)

1. Introduction :

The present training for para-medical personnel in Public Health subjects is not of high standard required to shoulder the responsibilities of independent jobs. At present a training for Health Inspectors is run in all the three medical Colleges to fulfil the needs of Auxiliary Health Workers as second line of defence. These people are usually employed as Sanitary Inspectors only to service under guidance of Medical Health personnel.

At present the State has about 200 Primary Health Centres and by the end of Third Five Year Plan the State will be having about 475 P.H.Cs. and the whole country will have about 5,000 P.H.Cs. The Medical Officer, P.H.C. under whose roof both preventive and curative sciences are catered to a population of 60,000 is overburdened with regular curative work and has practically no time to effectively concentrate on preventive aspects.

The Services of Primary Health Centre are as follows :—

1. Medical Relief.
2. M.C.H. including Family Planning.
3. School Health.
4. Health Education.
5. Environmental Sanitation.
6. C. D. Control.
7. Vital Statistics.

The Medical Officer is only concerned with effective supervision but not actual participation (except in school health service), so much so if the services are supervised by a well trained and university graduate Public Health person, it is expected that the preventive services may be well administered.

There is a common complaint throughout the State that the Medical Officer of P.H.C. is not taking desired interest in these services, one of the reasons, besides heavy work load, is the inability of Medical Officer in changing his attitude towards preventive care.

This course is proposed to provide better type of training of higher status to non-medical personnel so that they can be given placements to assist the Medical Officer in all preventive services in their effective implementation so that the desired objective of real integrated care is achieved.

In the Public Health Department many of the posts of the Health Officers in municipality are not filled up for want of Medical personnel who in majority of cases are unwilling to join due to reasons which are common throughout the country. Similarly they will be very useful as Assistants to District Health Officers.

2. **Aims and objectives of the Course :**

2-I. *Aims.*—Aim of the course is to provide a well qualified and highly trained para-medical personnel, university graduates in Public Health, who possess basic knowledge and skills in Public Health and allied subjects so that he may be key person in the successful implementation of Public Health programmes at various levels in the State, *viz.*, District level/Primary Health Centre and if further qualified may be absorbed in teaching institutions and research schemes.

II. *Objective.*—(1) To help the students to acquire requisite knowledge in basic sciences—physics/Chemistry/Biology.

(2) To help the student to acquire elementary knowledge in basic medical sciences—

—Anatomy/Physiology/Biochemistry.

—Michobiology including Pathology.

—Common diseases—Their causation and prevention.

(3) To help the student to apply his skills and knowledge to Public Health Engineering/various branches—Public Health Administration—Epidemiology.

(4) To help the student in developing on in sight of social sciences, Human Ecology, Psychiatry.

(5) To acquire skills in community services the approach for successful implementation of community Health programmes. To

work in the community Blocks as a team with other officials voluntary agencies, to provide the above community services.

(6) To have practical knowledge in various surveys both in social and medical subjects.

(7) To introduce into research programmes.

(8) To equip the student in providing further specialisation in various branches of Public Health leading to M.Sc., or D.Sc., in Public Health.

(A) *Job Analysis.*—Job Analysis may involve the undermentioned functions :—

(1) Epidemiology and control of communicable diseases including contact-tracing and follow-up procedures ;
(2) Environmental sanitation :
  (a) housing and latrines ;
  (b) disposal of sewage and sewerage systems ;
  (c) public cleansing and conservancy ;
  (d) vector-control, entomology and parasitology ;
  (e) safe-water supplies ;
  (f) food hygiene, including meat inspection and sampling ;
  (g) industrial hygiene and offensive trades ;
  (h) pest control ;
(3) school health and child health ;
(4) health education ;
(5) nutrition and dietetics ;
(6) records, administration and vital statistics ;
(7) public health law ;
(8) port health work ;
(9) first aid ;
(10) immunization procedures.

(B) *Job Placement.*—After due qualification they may be placed in the following posts :

Health Superintendent.—(a) An assistant to the Medical Officer of Primary Health Centre.

(b) Assistant to the District Health Officer.

(c) Incharge of Public Health Administration in a municipality.

Place of Teaching :

It has been decided in the recent conference for training of Auxiliary Health personnel in 1960 at New Delhi, to have a separate

Health Institute which may cater to the various types of training in Public Health. This will economise the programme. The Public Health institute may afford training in following :—

(1) Post-graduate in Public Health.

(2) B.Sc. (Public Health) leading to M.Sc./Ph.D./D.Sc.

(3) Training for other para-medical personnel. This institute may be manned by well qualified Officers with enough field experience. Post-graduate in Public Health, and teaching, assisted by Sanitary Engineer, who has teaching and field experience besides qualification as his deputy. Other staff may consist of social anthropologist. Medical entomologist, Statistical Officer (person well trained in biostatistics with experience), epidemiologist and other assistants to assist in the above branches. Till such institutions are established the training will be given in the existing Medical Colleges in the country.

Duration of course:

The course may spread over for 3 years at the end of which student will be examined for admitting him to the degree.

Qualifications for entrance:

A pass in the P.U.C. or Intermediate of Sciences with Physics/Chemistry/Biology and same rules and regulations which are required for M.B.B.S. course may be applied.

Summary of the Curriculum:

1st Year

Part I

Basic sciences.—Physics/Chemistry/Biology.

Part II

Basic Medical Sciences.—Anatomy, Physiology and Biochemistry.

Part III

Social Sciences.—Human Ecology, Social Anthropology, Sociology, Psychiatry.

During this year the student will be exposed to the community and Family approach by initiating him in conducting surveys.

2nd Year

Part I.—Microbiology, Nutrition, Pathology.

Part II—Public Health Engineering, Epidemiology, Statistics,. Environmental Sanitation.

Part III.—Public Health Administration.

Part IV.—*Common Diseases*—Symptoms and prevention (introduction to Medicine). During this year the student will continue to take care of family and community of which he was initiated last year. He will be given practical training in health services (stress is laid more on community services as a whole).

3rd Year

Part I.—Public Health Engineering.

Part II.—Epidemiology and Statistics.

Part III.—Public Health Administration and Social & Preventive Medicine.

During this year he will continue his training in Public Health Services in the same community, besides this he will have practical training in Urban and Rural Health services. He will be given introduction in the methods of research and specialisation in various branches of Public Health leading to further study if he so desires.

At the end of every year the student will be examined in all the subjects except Public Health Administration, Epidemiology and Sanitary Engineering which will be taken up at the end of 3rd year.

Examinations :

Examination may consist of theory, oral and practicals. Every student has to put minimum No. of marks in field assignments—(30%).

Syllabus :

Basic Sciences :

Physics/Chemistry/Biochemistry.

Same standard and syllabus for P.P.C. may be adopted limiting to the number of hours available.

Basic Medical Sciences :

Anatomy.—Elementary knowledge in Human skeleton, anthropology and anthropometry, circulatesn. Respiration, C.N.S., Alimentary Systems.

Physiology.—Blood and cardiovasculating digestive system, reproductive Endocrines/special senses, respuatery system, and C.N.S. —Genetics—applied genetics.

Various metabolisms and biochemical processes, Normal Physiological and Biochemical standards of man.

Microbiology :

Morphology of bacteric and classification of pathogentic organisms with particular references to diseases caused by them.

Medical Entomology.—Anatomy, recognition, Biology main diseases caused by mosquitoes, fly, flea, ticks, bugs, lice, etc.

Vaccines, Sera, Disinfection.

Staining techniques.

Protozology, Helminthology.

Insecticides.

Food and Nutrition and Dietics :

Food.—Importance and sources. Analysis of food stuffs, food adulteration—act—Proximate principles—minerals and vitamins—deficiency diseases. Balanced diet—Diet for special groups—infants, mothers and school children. Diet surveys—Nutrition surveys.

Human Ecology :

Definition.—Population and their growth—Influences of disease in population balance—Ecological adaption—History of growth of understanding of disease causation—Host factors—Physical environment—Biological environment—Social environment.

Sociology & Social Sciences :

Statistics :

Common statistical methods—inferences—scientific method—Sampling—Data—Analysis.

Vital Statistics.—Mechanics of Vital Statistics in Country/State—Defects—rates ratios—census of India—common measurement of health.

Sanitary Engineering :

Water—Food—Refuse and excreta disposal—insect vectors—Housing and ventilation—control measures for infectious diseases.

Industrial Hygiene

(1) Occupational Hazards—Their prevention.

(2) Dangerous and offensive trades.

(3) Factories act, Industrial Hygiene—Principles and present day problems of air pollution.

Epidemiology :

Epidemiology—Definition—Host—Agent—Environment parasitism and disease. Multiple causation of disease—pattern of disease spread in population—Biological gradient of disease—principles of control and prevention—Important communicable diseases and their control—use of specific problems from local situations.

Community Organisation and P. H. Administration :

Contribution of Social Sciences to application of Health measures.

(A) Individual—Personality/Belief/Adaptation.

(B) Group—Group sentiment and change and leadership.

(C) Community—Organisation in groups increasing size culture concept and attitudes—Health education—felt needs—group dynamics methods, media and complixity ranging through families, local population, State and nations levels of prevention—level enforcement to protect population—Organisation of Health Department—International, national, State, and Local Levels—Voluntary agencies, Medico—Social Work. —Duties, functions, Role of various health personnel at State/District and Periphery. Child Health—Maternal welfare—various services—objects of M.C.H. programmes— and assessment.

Family Planning .—Influence of population, growth on epidemiology of health, Demographic study—ecology of population—Family Planning—attitudes, approach, implementation—methods.

Five Year Plans.—Planning Commission—1st/2nd and 3rd five year plans—country/State—Progress—assessment.

Field lab-methods.—General and fundamentals of field lab-technique—that are useful for surveys.

Social Sciences :

Introduction to social anthropology, relation of anthropoly to Health, personality and social system Psychology of learnings—Social Psychiatry.

Introduction to research :

Objects of research—define problem—extent of problem—planning of programme—statistical analysis—inference and writing a report. Each student will be asked to choose one problem (may be—Epidemiological/P. H. Administration/Social subject).

Preventive Medicine:

Principles and concept of Social & Preventive Medicine—application of levels of Prevention.

Field Training:

1st year fortnightly visit to R.H.C. for family survey. 2nd year weekly visit to Centre—P. H. Services, continuation of survey.—Visits to places of P. H. interest. 3rd year—10 days at R.H.C. 15—30 days with District Health Officer. 15—30 days with Municipal Health Officer.

Appendix B—41

SET UP SUGGESTED FOR MORBIDITY SURVEY ORGANISATION AT THE CENTRE AND IN THE STATES.

The Health administrator at both the Central and State levels require reliable information on health and vital statistics on the basis of which they can plan, organise and operate their services more efficiently. The importance of quantitative data for public health and medical work has now been well established and thoroughly acknowledged. There are three major classifications of morbidity and mortality statistics namely, (a) vital statistics registration of births, deaths, marriages etc., (b) hospital and dispensary statistics and medical practitioner's records, (c) health survey statistics that is health data derived directly by interview and examination of population samples. The routine collection of vital statistics in India is obviously defective and unreliable and will remain so for some years to come in spite of the present efforts to improve the medical statistics. Even if perfected it is now widely recognised that neither vital statistics nor medical care statistics would provide types of data needed for health planning. Hospital and dispensary statistics are not yet standardised nor available. For this reason the importance of health surveys is rapidly growing and more and more attention is being given in both developed and under-developed countries to sample health survey methods.

There are certain special advantages of health survey methods. Based on population samples the survey organisation is far more economical than a method which depends on overall coverage. Thus once a survey organisation is established it can in a sequence of operations cover wide range of health topics and can be directed to deal with the questions of greatest health importance at any time. It would provide the data for the sound determination of priorities in health matters in relation to the national development plan.

The survey method involves *ad hoc* procedure and arrangements by collecting the information not otherwise available. It may be organised to collect a wide variety of information and some surveys may become continuous thus constituting a routine source of statistical information as is being done by the national sample surveys in India and the National Health Survey, U.S.A.

Needs for morbidity survey:

To plan preventive measures on an adequate basis we need accurate information about the nature, incidence and prevalence rates of sicknesses which cause social disturbance, high cost of medical care and high economic loss to the society. Briefly stating, the usefulness of morbidity statistics lies in general in their giving information on the following:

(1) The incidence rate of particular diseases, their frequencies and duration.

(2) Cost of medical care and economic loss to the community.

(3) Deaths caused by different diseases.

(4) Extent of disturbance or suspension caused by these diseases to the normal activities of the individuals.

(5) Extent of involvement of different groups of population *e.g.*, age, sex, ethnic groups, occupation or place of residence.

(6) Variation of incidence according to seasons or year to year.

(7) Effect of preventive health services and medical care programmes on the control of these diseases.

Health versus **Morbidity Surveys:**

The term "Morbidity Survey" forms only one element of a general 'health survey' providing information on one or all of the following broad components:

(1) Health status of population. This include general morbidity, morbidity from one disease or group of diseases, impairments, anthropometric measurements and mortality.

(2) Conditions influencing or influenced by health such as socio-economic conditions, nutrition, environmental factors, living habits and racial, cultural and genetic factors.

(3) Health services and medical care. This include subjects like need for health services, availability and utilisation of health services, evaluation of health programmes, measurement of expenditure in connection with the prevention and for treatment of illness.

Morbidity surveys usually comprise of the items under (1) above although information may be obtained upon some of the other items just to provide the background to the morbidity information.

The decision on the method to be used should depend upon the objectives of the survey based on the following points :

(1) The extent of information to be collected.
(2) The practicability of each statistical unit for investigation.
(3) The kind of items to be included.
(4) The practicability of diagnosis of the morbid conditions.
(5) The type of investigators to be engaged in a field survey.
(6) Cost of the survey : as the actual size of the sample may have to be adjusted without sacrificing too much on statistical adequacy.

Types of Morbidity Surveys :

Specific disease or case-finding surveys, such as attempts to locate all tuberculosis, leprosy or venereal disease cases or all blind persons, or all cancer cases in given areas. The relative frequency of the cases will determine this sample size, otherwise it would be too expensive to carry out a house-to-house canvass of the whole area. The alternative plan is that the investigator directs his attention to locating cases, following every clue he can find and by visiting only those localities, households, establishments or groups of population where there is reason to suspect the presence of a case. In such a survey, the investigator uses the population as enumerated or estimated from the census for the calculation of rates. These latter methods can never claim to provide complete information.

The house-to-house interview and health examination survey :

This survey is begun by conducting a special Census of the population of this selected area. Thereafter a statistically adequate sample of households in this area—a block, sub-division or a district, is completely convassed by visiting every household in the sample and asking the same question by trained workers, and recording the answers in a standard form supplemented by noting down the records of physical examination and such laboratory tests as can be easily undertaken in the field. The canvassing includes information about age, sex, occupation, addiction, disability, fertility data, diet, present state of health and nutrition, height, weight history of past illness within a specified period and the results of physical and laboratory examination of the persons examined supplemented by family history, income and expenditure, outlook, vital events etc. Furthermore the diagnostic measurements may be executed to mass skin test, surgical tests, radiography etc. This second type of survey is divided into two parts according to the nature of the sickness data collected :

(a) *Prevalence Survey.*—In the prevalence survey each family member is interrogated about illness existing on the day of the visit and the illness is diagnosed by the physician investigator of the survey unit with the help of simple routine laboratory tests wherever needed. The method should afford maximum completeness in the recorded data so far as the sickness existing at the time of interview is concerned and which can be objectively defined such as, those causing inability to work or pursue usual duties. There are however two-fold defects in this kind of investigation, *viz.*, (1) the recorded cases of illness are generally weighed by chronic diseases which last for a few months or even year or more ; (2) the amount of illness recorded varies considerably with seasons and thus diseases not prevalent at the time will remain unrecorded.

(b) *Incidence Survey.*—To overcome the above defects the records of illness during a specified period is also gathered during the house-to-house interview. The housewife and the adult members of the house are asked for record of illnesses that occurred during the past one week, one month, two months etc., whether or not the person is sick on the day of the visit. The advantage of such a record is in having more balanced information regarding acute and chronic diseases including the minor affections of short duration that exists on the day of visit. The disadvantage of this method is that neither the housewife or the other members themselves can be expected to remember and report completely about all past illnesses, except perhaps for a short period. Thus if one attempts to get a record of past twelve-month period, the illnesses for the earlier months will be less completely reported than those for the months nearer the date of visit. One must therefore enquire about the severe illnesses and those that interfered with the activities of the individual, such as abstention from school, work, normal avocations or missing a festival or social programme etc., if one expects the records to be complete for the entire year.

To avoid the loss of minor cases in the earlier months, the initial survey may be followed by *periodic incidence survey* by which the families are visited at fairly frequent intervals and at each visit a record is made of illnesses that have occurred since the preceding visit, but this procedure is expensive and time consuming.

However, the principal advantages of surveys based on *ad hoc* medical examinations are : (1) the relative higher degree of diagnostic accuracy (2) the results are directly applicable to a known population provided proper sampling techniques are employed. The actual difficulty is in finding personnel with the desired qualifications for the proper conduct of the medical and for laboratory examinations.

Births and deaths:

Since the vital statistics recording is grossly deficient in the country, recording of births and deaths with causes should be included in all morbidity and health survey. For this purpose the live births, still births, abortions and mis-carriages and all deaths occurring in the area during the year preceding the date of survey should be carefully interrogated and recorded.

Problems in the collection of sickness data:

Many problems regarding definitions and criteria of ill health, period and point prevalence, causes of morbidity, causes of death sampling etc., need to be tackled before such surveys can be instituted.

Pilot Survey:

A pilot survey is carried out to obtain data to facilitate the planning and execution of the main survey. The purpose may be :

(i) To evolve and examine the survey techniques *e.g.*, definition design of proforma, interviewing methods etc.

(ii) To provide data for selecting the sampling units, basis for stratification and estimation of sampling error.

(iii) To estimate the cost and personnel necessary for the main survey.

(iv) To training the staff and to get them accustomed to the field work and its difficulties.

Administrative set-up:

The Central Bureau.—It should form a part of the Central Directorate of Health with the following functions:

(1) To organise and coordinate health and morbidity surveys throughout the country covering both the rural and urban areas.

(2) To evolve and adopt uniform procedure in respect of both non-diagnostic and diagnostic surveys for the urban and rural areas in collaboration with the State bureaus.

(3) To conduct special surveys on diseases as and when necessary.

(4) To analyse and interpret the data and to prepare and publish the reports of the surveys on all India as well as State basis (for comparison and geographic distribution of morbidities).

(5) To publish bulletins on Health and morbidity surveys and annual reports of the Bureau.

State Bureau of Epidemiology and Morbidity Health Surveys:

The bureau may be placed at the initial stage under the Assistant Director of Health Services (Epidemiology) who will establish and maintain the necessary collaborative link with the Central Bureau of Epidemiology and Morbidity Surveys and will act as the state representative in the Central Advisory Committee. The bureau will also establish collaboration with the State Statistical Bureau for such statistical assistance as will be necessary from time to time *e.g.*, punching, sorting and tabulation etc. This bureau will have following functions:

(1) To organise and carry out both non-diagnostic and diagnostic surveys in coordination and collaboration with the Central Bureau as planned jointly with them.

(2) To check and process the data by punching, sorting and tabulation (if facilities are available) or to check and transfer the data to punch card for sorting and tabulation by the Central Bureau and to analyse these and write the report in collaboration with them. The State Bureau may also undertake the publication of the detailed report concerning the surveys conducted within the State.

(3) To conduct special surveys of diseases, if necessary.

(4) To assist in the planning of health services in the State.

In the establishment of Health and Morbidity Survey Units, a close collaboration is needed between the Central and State Bureaus at all stages, *viz.*, planning of methods and contents, selection of areas, collection, processing and analysis of data and publication of results.

This programme of general health and morbidity surveys does not preclude the *ad hoc* special surveys in the field of specified diseases such as T.B., V.D., Leprosy, Malaria, Guineaworm, Cancer, Accidents, Goitre, etc., as may be found to be necessary.

The survey may be divided into two distinct types *viz.*, (a) a continuing sequence of general purpose non-diagnostic surveys to be conducted to cover wider areas and larger population by trained para-medical staff under the supervision of medical investigators and (b) a sequence of medico-social diagnostic surveys to be conducted primarily by the state units of trained medical officers, with the help of field staff and a field laboratory. These are described in more details below. The plans and schedules should be drawn up jointly so that the same procedure and proforma are used uniformly all over the country.

An Advisory Health Survey Technical Committee should be established at the central level to assist in the planning and implementation of the programme. This Committee should have representatives of the D.G.H.S., and of various State Governments actually in charge of survey work.

The general feature of the continuing non-diagnostic survey will be as follows :

(a) The survey is to be completed by paying for visits a year to the selected households. During the first visit, the collection of information will be directed primarily at the social, economic, demographic and environmental attributes of health and sickness including addiction, disability, accidents, chronic impairments, duration of illness, use of dispensaries, hospitals and free or paid medical care, work time and economic loss during the preceding three months. The remaining three visits will be directed towards all information connected with sickness and impairments during the subsequent three-monthly periods.

(b) The information collected will serve as an aid to evaluating priorities for health programmes in relation to non-health programmes to the general plans for national development.

(c) Special topics may be included by turn for successive surveys each year.

(d) Arrangements should be provided for proper supervision of field work, and for checking and editing the data. The analysis and interpretation of the data may be the responsibility of the Central Bureau of Epidemiology and Morbidity Survey.

(e) It should cover both the urban and rural areas with such modifications of the plan as are needed to suit the local conditions.

The general features of the continuing medico-social diagnostic survey will be as follows :—

(a) This survey should be directed at the diagnostic, physical, clinical, environmental as well as socio-economic components of health and diseases, or will serve *inter alia* the purposes of determining priorities within the health section. This survey need not necessarily overlap the non-diagnostic survey and may be planned independent of it, or it may be carried out as a sub-sample of the non-diagnostic survey on the basis of multiphase sampling as described later.

(b) The survey will be conducted by special teams of medical and para-medical personnel equipped with appropriate diagnostic and measurement facilities, and may be subject to limited geographic coverage.

(c) Much of its work should be the responsibility of the States, as in addition to determining priorities this survey would be of value in the planning, administration and evaluation of health work.

(d) The survey should be adequately supervised and checked.

(e) The data collection will be the responsibility of the State Bureau of Epidemiology and Morbidity Surveys in close collaboration with the Central Bureau.

(f) The sample should cover 4-5% of the population and the information should be collected on the basis of 'point' prevalence as well as 'period' prevalence not exceeding 3 months. The survey should be on continuing basis preferably in four contiguous areas during one year in order to cover all seasons and to give a yearly picture of the areas taken together.

(g) To establish comparability of methods and facilitate administration of surveys, a core field unit should be established at the Central Bureau. Also, in order to maintain medical orientation in classification the tabulation should be done on a unit established in the Central Bureau. Analysis and interpretation would be the joint responsibility of the medical and statistical personnel involved at the Union and State levels.

(h) It should cover both the urban and rural areas and the methods and contents should be planned separately to suit these areas.

ORGANISATIONAL CHART

Central Bureau of Epidemiology & Morbidity Surveys

Director-General of Health Services

Director, Central Bureau of Epidemiology & Morbidity Surveys

Assistant Director

Field Unit (Urban)		Statistical Unit (headquarter)		Administrative Unit (headquarter)		Field Unit (Rural)	
Senior Medical Officer	1	Senior Statistician	1	Assistant Officer	1	Senior Medical Officer	1
Field Medical Officers	7	Assistant Statistician	1	Upper Division Clerk	1	Field Medical Officers	2
Field Statistician	1	Statistician Assistants	3	L.D.Cs.	3	Sanitary Inspectors	2
Lady Health Visitors	7	Computors	6	Typists	2	Field Statistician	1
Field Assistants	7	Puncher-*cum*-Verifier	4	Stenographers	2	Field Assistants	2
Equipment carriers	7	Sorter & Tabulator	1	Artist-*cum*-Photographer	1	Equipment carriers	2
Peons	2	Peon	1	Store clerk	1	Peon	1
Sample collectors	7			Peon	1	Sample collectors	2
Lower Division Clerk-*cum*-Typist.	1					Lower Division Clerk	1
Lab. Staff :		*Transport Staff:*					
Bacteriologist	1	(1) Urban—				*Laboratory Staff :*	
Laboratory Technicians	3	Drivers	2			Laboratory technician	1
Laboratory Assistants	3	Cleaner	1			Laboratory Assistant	1
Laboratory Attendents	3	(2) Rural—				Laboratory Attendant	1
Sweepers	3	Drivers	2			Sweepers	2
Peon	1	Cleaner	1				

ORGANISATIONAL CHART

State Bureau of Epidemiology and Morbidity Surveys

Director of Health Services

Assistant Director of Health Services (Epidemiology)

Non-diagnostic Survey Unit (for 5 lakhs population)		Statistical Unit Headquarter		Administrative Unit Headquarter		Diagnostic Survey Unit (for 1 lakh population)	
Medical Officer-in-charge	1	Statistician	1	Assistant Officer	1	Medical Officer-in-charge	1
Field Supervisors	3	Computors	3	U.D.C.	1	Field Medical Officers	3
Field Investigators	10	Puncher-*cum*-Verifier	3	L.D.C.	1	Field Statistician	1
Peon	1	Sorter & Tabulator	1	Typist	1	Field Assistants	3
				Peon	1	Equipment carriers	2
						Sample Collectors	4
						Field Lab.:	
						Laboratory Technician	1
						Laboratory Assistant	1
						Laboratory Attendant	1
						Lower Division Clerk	1
						Drivers	
						Cleaner	1
						Peon	1

Appendix B-42

FINANCIAL IMPLICATIONS OF CERTAIN RECOMMENDATIONS

Cost of Training Enhanced number of Doctors, Nurses and Auxiliary Nurse-Midwives

The cost of training additional number of doctors, nurses and auxiliary nurse-midwives, beyond the existing facilities, to meet the requirements suggested here is estimated and shown in the statement below.

Medical Colleges :

In view of the pressing need for qualified doctors 40 more medical colleges are proposed to be established during the third and fourth plan periods : five per year during 1962-66 and four per year during 1966-71, each with an annual admission capacity of 100 students. The estimated cost of establishment and training doctors in these 40 medical colleges is estimated and shown in col. (2) of the statement as follows : non-recurring expenditure of Rs. 40,000 per seat for the first two years and Rs. 10,000 per seat for the next two years of establishment and recurring expenditure of Rs. 4,000 & Rs. 6,000 per seat in the first two years and Rs. 10,000 per seat thereafter annually.

Post-Graduate Institutes and Dental Colleges :

Five post-graduate institutes during the third plan and ten such institutes during the fourth plan period are proposed to be established : one institute of admission capacity 50 each year during 1962-65 and two each during 1965-71. Non-recurring expenditure of Rs. 30 lakhs and Rs. 20 lakhs over the first and second years of establishment respectively and recurring expenditure of Rs. 10,000 per seat are assumed.

Ten dental colleges (two per year) are recommended to be established during 1962-67. Non-recurring expenditure of Rs. 50,000 per seat (Rs. 35,000 in the first year and Rs. 20,000 in the second year of establishment) and recurring expenditure of Rs. 8,000 per seat are assumed.

The combined cost of establishment and training in these postgraduate institutes and dental colleges is shown in col. (3) of the statement.

Training of nurses and Auxiliary nurse-midwives :

As per requirement of nurses and auxiliary nurse-midwives so as to reduce the acute shortage, indicated in Appendix 30, the cost of training is estimated as follows : Taking account of the existing number of about 30,000 nurses and 4,400 auxiliary nurse-midwives and the present annual outturn of qualified nurses and auxiliary nurse-midwives, the number that will have to be trained additionally and cost thereof are shown in cols. (4) to (7) in the statement.

COST OF TRAINING DOCTORS, SPECIALISTS AND NURSING PERSONNEL

(Expenditure in Rs. Lakhs)

Year	Doctors	Specia-lists	Nurses		Auxiliary Nurse-Midwives	
			No. to be trained	Cost of training	No. to be trained	Cost of training
1	2	3	4	5	6	7
1962-63 .	220	78	6,493 per annum till 1971.	142.85	6,816 per annum till 1976.	81.79
1963-64 .	480	139		285.70		163.58
1964-65 .	680	165		428.55		163.58
1965-66 .	930	226		428.55		163.58
	2,310	608		1,285.65		574.53
1966-67 .	1,136	282		428.55		163.58
1967-68 .	1,334	275		428.55		163.58
1968-69 .	1,544	280		428.55		163.58
1969-70 .	1,744	300		428.55		163.58
1970-71 .	1,944	320		428.55		163.58
	7,702	1,457		2,142.75		817.90
1971-72 .	1,968	270	21,606 per annum till 1981.	707.36		163.58
1972-73 .	1,960	230		986.17		163.58
1973-74 .	2,000	230		1,264.98		163.58
1974-75 .	2,000	230		1,264.98		163.58
1975-76 .	2,000	230		1,264.98		163.58
	9,928	1,190		5,488.47		817.90

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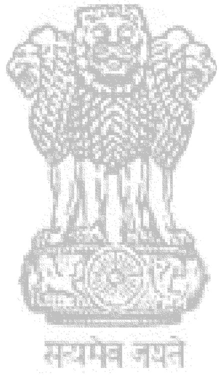
NOTE.—To attain recommended number of nurses by 1991 (one per 5,000 population as in the cost of training during 1976-1991 would be as follows :—

Period	No. to be trained	Estimated Expenditure
		Rs. Lakhs
1976-81	21,606 per annum	6,324.90
1981-86	51,086 per annum	13,447.62
1986-91	51,086 per annum	15,228.30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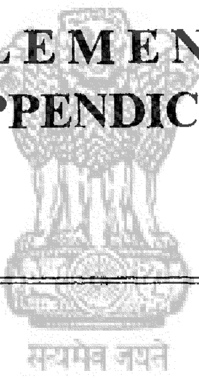
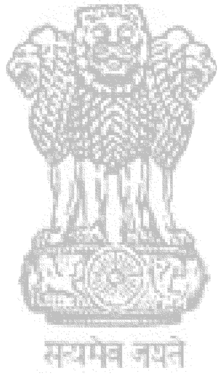
SUPPLEMENTARY APPENDICES

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Appendix B-43

STATEWISE PER CAPITA EXPENDITURE ON MEDICAL RELIEF

Name of the State	1954-55 Total expenditure on medical relief	1954-55 *Per capita* expenditure on medical relief	1955-56 Total expenditure on medical relief	1955-56 *Per capita* expenditure on medical relief
	Rs.		Rs.	
1. Andhra Pradesh	15,779,762	0.74	200,639,24	0.94
2. Assam	11,565,770	1.22	15,288,360	1.59
3. Bihar	35,045,338	0.85	56,605,436	1.36
4. Bombay	45,612,439	1.20	58,090,486	1.50
5. Delhi	6,505,977	3.22	7,570,741	3.60
6. Himachal Pradesh	2,141,905	2.15	3,451,741	3.46
7. Jammu & Kashmir	N.A.	N.A.	N.A.	N.A.
8. Kerala	11,429,908	1.16	16,647,100	1.67
9. Madhya Pradesh	12,686,018	0.58	16,727,194	0.76
10. Madras	40,788,606	1.07	43,800,570	1.14
11. Mysore	13,862,978	1.44	14,873,317	1.52
12. Orissa	9,169,597	0.62	11,311,957	0.75
13. Punjab	11,682,243	0.86	14,545,759	1.05
14. Uttar Pradesh	36,732,337	0.56	42,637,350	0.65
15. West Bengal	48,746,583	1.90	52,149,971	2.01
16. Rajasthan	19,195,226	1.21	26,526,159	1.65
17. Andaman & Nicobar Islands	N.A.	N.A.	N.A.	N.A,
18. Manipur	N.A.	N.A.	N.A.	N.A.
19. Tripura	N.A.	N.A.	N.A.	N.A.
20. Central Government	27,265,492	0.07	37,533,390	0.10
GRAND TOTAL	402,880,765	1.09	509,189,536	1.36

N.A.—Not available.

Appendix B-44

DISTRIBUTION OF HOSPITALS AND DISPENSARIES IN THE RURAL AREAS BY POPULATION AND AREA

State	1954 Population (in millions)	1954 Hospitals	1954 Dispensaries	1955 Population (in millions)	1955 Hospitals	1955 Dispensaries	1956 Population (in millions)	1956 Hospitals	1956 Dispensaries	Area in sq. miles
1. Andhra Pradesh	32.65	81	209	33.08	97	230	33.52	110	229	105,677
2. Assam	9.59	10	463	9.76	10	463	9.92	N.A.	N.A.	85,012
3. Bihar	40.57	73	581	40.46	73	581	40.86	77	615	66,161

State	1954			1955			1956			Area in sq. miles
	Population (in millions)	Hospitals	Dispesaries	Population (in millions)	Hospitals	Dispensaries	Population (in millions)	Hospitals	Dispensaries	
4. Bombay	51.15	39	616	52.05	39	625	52.96	73	748	191,367
5. Delhi	1.93	7	13	1.99	8	15	2.05	3	17	578
6. Himachal Pradesh	1.13	10	41	1.13	10	41	1.14	7	52	10,904
7. Jammu & Kashmir	4.54	9	87	4.59	9	87	4.63	9	130	92,780
8. Kerala	14.51	14	249	14.81	14	249	15.11	N.A.	N.A.	14,601
9. Madhya Pradesh	26.80	103	175	27.03	103	175	27.25	N.A.	N.A.	170,909
10. Madras	31.32	91	326	31.81	116	394	32.25	114	378	50,171
11. Mysore	20.58	41	392	20.94	43	557	21.32	78	562	73,560
12. Orissa	14.94	101	225	15.03	102	231	15.12	109	231	60,136
13. Punjab	16.63	14	405	16.78	14	428	16.93	14	460	47,427
14. Uttar Pradesh	65.60	108	599	66.34	108	616	67.08	110	634	113,433
15. Rajasthan	16.74	59	105	16.98	63	106	17.22	75	139	132,439
16. West Bengal	27.41	314	625	27.75	342	624	28.10	342	N.A.	34,944
17. Andaman & Nicobar.	0.03	3	14	0.03	4	17	0.03	4	18	3,215
18. Manipur	0.60	15	31	0.61	15	32	0.62	12	36	8,628
19. Tripura	0.69	3	62	0.70	4	64	0.72	4	68	4,116

N.B.— N.A.—Not available.

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Appendix B-45

DISTRIBUTION OF HOSPITALS UNDER DIVISION, DIST. AND SUB-DIVISIONAL HEAD QUARTERS, 1958.

Distribution of all Hospitals Under :

Name of the States	At Divisional Hd. Quarters	At Distt. Hd. Quarters	At Sub-Div. and Taluk Hd. Quarters	Total
1	2	3	4	5
1. Andhra Pradesh	..	20	420	440
2. Assam	..	31	18	49
3. Bihar	..	17	52	69
4. Bombay	Information not received.			

Name of the States	At Divisional Hd. Quarters	At Distt. Hd. Quarters	At Sub-Div. and Taluk Hd. Quarters	Total
5. Jammu & Kashmir	Information not received.			
6. Madras	12	14	94	120
7. Kerala	18	14	30	62
8. Madhya Pradesh	..	62	174	236
9. Mysore	33	26	24	83
10. Orissa	8	20	22	50
11. Punjab	15	18	132	165
12. Rajasthan	37	43	159	239
13. Uttar Pradesh	28	192	100	320
14. West Bengal	51	57	87	193
15. Andaman & Nicobar Island	..	1	5	6
16. Delhi	1	17	..	18
17. Himachal Pradesh	1	7	7	15
18. Manipur	5	5	..	10
19. Tripura	..	2	4	6
20. Pondicherry	1	3	..	4
TOTAL	210	549	1,328	2,087
Proportion of the Total	10	26	64	100

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Appendix B-46

Hospitals by Size—Ownership—Type, 1957

Number	Government		Municipal		Private		Total		General		Others	
Beds	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds
1— 24	916	10,059	203	2,113	45	680	1,164	12,852	1,114	12,175	50	677
25— 49	334	11,423	29	990	38	1,352	401	13,765	355	12,124	46	1,641
50— 99	211	13,961	24	1,524	58	3,886	293	19,371	249	16,448	44	2,823
100—149	86	9,946	1	120	38	4,001	125	14,067	111	12,465	14	1,602
150—199	41	6,834	4	892	18	3,003	63	10,729	51	8,647	12	2,082
200—299	50	11,776	2	478	23	5,755	75	18,009	54	13,022	21	4,987
300—499	42	15,653	6	2,314	13	4,614	61	22,581	47	17,422	14	5,159
Over-500	33	23,097	..	..	4	2,535	37	25,632	26	17,425	11	8,207
TOTAL	1,713	102,749	269	8,431	237	25,826	2,219	137,006	2,007	109,728	212	27,278

Appendix B-47

SPECIAL HOSPITALS AND INSTITUTIONS, (1958)

Name of States	Tuberculosis			Leprosy				Venerial Diseases		Mental Diseases		Infectious Diseases*	
	Hospitals	Dispensaries	No. of Beds	Hospitals	Dispensaries	Control Centres	No. of Beds	Hospitals & Dispensaries	No. of Beds	Hospitals	No. of Beds	Hospitals	No. of Beds
Andhra Pradesh	7	15	2,072	11	36	6	1,796	7	44	2	810	N.A.	N.A.
Assam	7	4	464	10	24	1	1,023	3	N.A.	1	740	1	38
Bihar	5	24	770	9	124	14	1,078	8	60	2	1,800	3	146
Bombay	33	31	5,127	10	119	5	2,795	3	150	7	3,053	13	837
Jammu & Kashmir	4	1	370	2	..	..	170	1	..	1	24	1	40
Kerala	5	6	1,105	7	17	3	2,004	2	87	3	754	2	34
Madhya Pradesh	11	24	1,237	10	43	5	2,382	8	..	2	170	3	56
Madras	12	18	2,147	21	283	9	2,846	11	145	1	888	4	394
Mysore	11	10	1,279	4	50	..	507	2	68	2	749	3	162
Orissa	1	4	77	22	361	12	1,528	7	29	..	..	1	50
Punjab	12	20	1,561	10	4	..	997	4	17	1	500	3	58
Rajasthan	6	8	657	2	3	..	95	4	36	3	204	2	84
Uttar Pradesh	16	26	1,690	10	23	6	676	10	15	3	365	20	556
West Bengal	13	35	3,107	6	140	2	1,779	18	110	4	255	3	358
Andaman & Nicobar	..	1	18	1	1	..	120	..	..	..	..	..	..
Delhi	2	4	1,253	1	1	..	130	2	4	..	..	1	117
Himachal Pradesh	1	4	193	2	19	1	58	15	..	..	..	..	..
Manipur	1	..	34	..	..	2	..	..	..	..	..	..	..
Tripura	..	..	..	..	1	..	..	1	..	..	..	..	..
TOTAL	147	235	23,161	146	1,248	66	19,264	106	765	32	11,312	60	2,958

Source: Central Bureau of Health Intelligence, Directorate General of Health Services.

Appendix B-48

POPULATION SERVED BY ONE MEDICAL INSTITUTION.

Name of States	Population Served by one Medical Institution			
	1942		1958	
	Rural	Urban	Rural	Urban
Andhra Pradesh	..	..	29,700*	..
Assam	43,337	4,756	16,250	..
Bihar	62,744	18,603	77,940	21,780
Bombay	34,927	17,127	40,630	12,120
Jammu & Kashmir	..	..	16,890*	..
Kerala	..	..	68,290	38,740
Madhya Pradesh	66,008	11,379	51,000	14,520
Madras	42,672	28,496	51,990	37,610
Mysore	..	..	26,750	36,920
Orissa	52,548	15,276	42,360	7,086
Punjab	30,925	15,188	30,790	16,140
Rajasthan	..	..	30,820*	..
Uttar Pradesh	1,05,626	17,669	71,640	21,130
West Bengal	37,996	19,730	32,690	22,130
Delhi	17,096	33,128	..	4,671
Himachal Pradesh	..	..	16,840	4,840

*Rural & Urban.

Appendix B-49

HOSPITAL BEDS AND POPULATION RATIO :

Name of States	Ratio of Hospital Beds to Population		No. of Beds to 1000 Population	
	1942*	1958	1942*	1958*
Andhra Pradesh	..	1 to 2,555	..	0.443
Assam	1 to 8,729	1 to 3,112	0.115	0.321
Bihar	1 to 6,031	1 to 3,769	0.166	0.265
Bombay	1 to 2,613	1 to 2,954	0.383	0.339
Jammu & Kashmir	..	1 to 2,114	..	0.475
Kerala	..	1 to 1,348	..	0.742
Madhya Pradesh	1 to 6,140	1 to 3,139	0.163	0.319
Madras	1 to 3,339	1 to 2,560	0.299	0.391
Mysore	..	1 to 1,791	..	0.558
Orissa	1 to 6,298	1 to 3,431	0.159	0.291
Punjab	1 to 2,309	1 to 1,571	0.433	0.637

*Figures correspond to the regions corresponding to the present re-organized States, Bhore Committee Report, Volume I—p.37.

Name of States	Ratio of Hospital Beds to Population		No. of Beds to 1000 Population	
	194[illegible]*	1958*	194[illegible]*	1958*
Rajasthan	..	1 to 1,967	..	0.512
Uttar Pradesh	1 to 4,500	1 to 3,656	0.222	0.274
West Bengal	1 to 5,530	1 to 1,120	0.181	0.893
Delhi	1 to 664	1 to 4,443	1.506	0.225
Himachal Pradesh	..	1 to 9,230	..	0.108
Manipur	..	1 to 1,763	..	0.567

*Figures correspond to the regions corresponding to the present re-organized States, Bhore Committee Report, Volume I—p. 37.

Appendix B-50

NUMBER OF SPECIALISTS, MATRONS, NURSING SISTERS ETC. EMPLOYED IN STATES, 1958

Name of States	Specialists		Matrons		Nursing Sisters		Sister Tutors		Staff Nurses		Pharmacists		Laboratory Asst.	
	Govt.	Others	Govt.	Others	Govt.	Others	Govt.	Others	Govt.	Others	Govt.	Others	Govt.	Others
Andhra Pradesh	..	..	..	..	..	..	..	..	..	..	..	19	NA	..
Assam	29	..	6	..	54	..	..	..	196	..	..	..	..	..
Bihar	..	..	8	..	64	..	9	..	271	..	968	..	..	..
Maharashtra	N.A.	..	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	..	N.A.	..
Gujarat	N.A.	..	N.A.	N.A.	..	..	N.A.	N.A.	N.A.	N.A.	N.A.	..	N.A.	..
Jammu & Kashmir	N.A.	..	N.A.	N.A.	..	..	N.A.	N.A.	N.A.	N.A.	N.A.	..	N.A.	..
Kerala	53	..	..	..	20	..	..	..	961	3	369	14	5	..
Madras	11	..	6	..	193	..	32	..	..	..	..	..	10	..
Madhya Pradesh	119	..	..	..	116	..	11	..	..	..	682	..	173	..
Mysore	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Orissa	42	..	1	..	19	..	7	..	208	25	496	38	17	..
Punjab	41	..	12	..	62	..	9	N.A.	375	N.A.	785	N.A.	119	N.A.
Rajasthan	61	..	16	..	52	..	12	N.A.	293	..	193	N.A.	N.A.	..
Uttar Pradesh	..	..	N.A.	N.A.	..	..	..	..	..	..	N.A.	N.A.	N.A.	..
West Bengal	490	..	N.A.	..	N.A.	..	N.A.	..	1325	..	794	649	123	..
Andaman Nicobar	1	..	1	..	7	..	..	..	15	..	..	..	2	..
Delhi	..	15	1	5	36	9	4	2	111	10	63	7	23	2
Himachal Pradesh	..	2	5	..	6	..	..	..	58	..	194	..	..	..
Manipur	..	..	1	..	3	..	..	..	12	..	24	..	1	..
Tripura	..	..	..	..	..	..	..	..	1	..	75	..	..	..
Pondicherry	6	..	..	..	10	..	..	..	21	..	..	..	1	..
TOTAL	847	23	57	5	642	9	84	2	3,846	38	4,663	708	474	2

Appendix B-51

STATEMENT SHOWING THE NUMBER OF SISTER TUTORS, WARD SISTERS, ETC. IN EACH STATE FOR THE YEAR 1959

Name of the States	Tutors	Ward Sisters	Number of Schools					Number of Students qualified				Population per Nursing School	Total Nursing personnel Regd. up to 31-12-59	Population per Nurse
			G.N.	Mid.	A.N.M.	H.V.	Total	G.N.	Mid.	A.N.M.	H.V.	in thousands		(in thousands)
Andhra Pradesh	52	186	28	36	16	2	82	471	339	106	76	425	6,717	5.19
Assam	13	89	24	21	20	..	65	133	91	67	..	161	1,546	6.77
Bihar	21	94	15	13	7	1	36	136	108	87	16	1,169	2,096	20.33
Bombay	74	470	47	53	44	4	148	512	687	57	64	377	14,885	3.75
Kerala	17	69	3	4	11	1	19	64	40	171	28	846	(included in Madras)	
Madhya Pradesh	43	109	16	17	23	1	57	134	116	86	17	490	4,415	6.33
Madras	52	159	14	31	8	1	54	311	659	134	54	622	19,189	3.76
Mysore	18	123	13	19	7	1	40	138	220	101	..	562		
Orissa	6	23	5	3	8	..	16	49	37	28	..	963	719	21.43
Punjab	30	72	12	11	15	2	40	80	75	80	47	435	5,318	7.29
Rajasthan	15	70	7	7	9	1	24	40	25	47	—	749		
Uttar Pradesh	28	203	24	22	8	3	57	199	142	39	44	122	5,009	13.85
West Bengal	25	104	20	23	9	1	53	235	272	90	9	550	9,215	3.15
Delhi	18	150	5	4	2	1	12	59	67	7	62	190	(Included in Punjab).	
Jammu & Kashmir	..	..	..	..	1	1	2	..	..	..	..	238	..	
Himachal Pradesh	3	7	1	1	2	1	5	2	..	4	..	230	(Included in Punjab).	
Tripura	..	..	..	1	..	..	1	..	..	19	..	770	..	..
Manipur	..	..	..	..	..	..	..	..	..	..	..	..	..	..
TOTAL	415	1,928	234	266	190	21	711	2,563	2,978	1,123	417	566	68,990	

Appendix B-51A

LIST OF INSTITUTIONS IN WHICH DEGREE COURSES AND POST-CERTIFICATE COURSES IN NURSING ARE GIVEN

1. **College of Nursing, New Delhi.**
    (i) B.Sc. (Hons.) Course in Nursing.
    (ii) Post-Certificate Courses :—
        (a) Ward Sister Course.
        (b) Nursing Administration.
        (c) Sister Tutor.
        (d) Midwifery Tutor.
2. **Christian Medical College Hospital, Vellore.**
    (i) B.Sc. Course in Nursing.
    (ii) Sister Tutors Course.
3. **Mid India Board of Examiners, Graduate School for Nurses, Indore.**
    Post-Certificate Course in :—
    (1) Public Health Nursing.
    (2) Ward Sisters.
    (3) Sister Tutors.
    (4) Nursing Administration.
4. **Government General Hospital, Madras.**
    Diploma in Nursing—(i) Sister Tutor Course.
    (ii) Administration Course.
5. **All India Institute of Hygiene & Public Health, Calcutta.**
    Post-Certificate Course in Public Health Nursing.
6. **Department of Public Health, Madras State.**
    Post-Certificate Course in Public Health Nursing.
7. **J. J. Group of Hospital, Bombay.**
    Post-Certificate Course in Public Health Nursing.
8. **All India Institute of Mental Health, Bangalore.**
    Post-Certificate Course in Psychiatric Nursing.
9. **The Tuberculosis Association of India, New Delhi.**
    Post-Certificate Course in Tuberculosis Nursing.
10. **Lady Reading Health School, Delhi.**
    Public Health Nursing.
11. **Gandhi Medical College, Hyderabad.**
    B.Sc. Course in Nursing.

Appendix B-52

A SUMMARY OF THE PLAN PROJECTS COMMITTEE'S RECOMMENDATIONS ON NATIONAL WATER SUPPLY AND SANITATION SCHEMES

The existing procedure of allocating funds on a year to year basis and the belated information to the State Governments regarding availability of funds for any year leave very little time for the projects, to procure materials and incur expenditure. The only practical solution to speed the pace of work would be to place the financing of this programme on a three or at least two years basis as a special case.

The preparatory work required to be done before a scheme is taken up for planning is prolonged and cumbersome. It should be possible for the State Governments to reduce procedural delays, fix up priorities for various schemes and take preparatory work on them well in advance. It is equally essential for the State Governments to detail special staff for the advance investigation and preparation of projects.

State Governments should take advance action in regard to land acquisition proceedings relating to water supply and sanitation schemes so that there is no avoidable delay in the execution of component works of the scheme.

Inter-State sales tax at the rate of 7 per cent is charged from the Corporation and other local bodies while the State Governments have to pay only 1 per cent on their inter-State purchases. Government should consider this and remove the disparity in the levy of sales tax.

The concerned agency in the State should furnish details of the schemes in the specific form laid down for the purpose, in order to avoid unnecessary duplication of work and delay.

The Health Ministry may explore ways and means of cutting short existing procedural delays in according sanctions to schemes.

An analytical study should be made of the actual expenditure incurred by Government Departments on various schemes planned and executed by them on behalf of local bodies with a view to fixing centage charges on a rational basis.

State Governments should set up a separate Public Health Engineering Department where they have not done so.

The cadre of municipal engineers should be provincialised and integrated with Public Health Engineering Department to ensure interchangeability and continuity of experience of personnel in all aspects of water supply and sanitation works.

It is desirable to arrange for refresher course to the different grades of in-service personnel at suitable centres in the States.

A National Water and Sewage Works Association should be formed to act as common forum for free exchange of ideas on the problems met with in the operation and maintenance of water treatment and sewage disposal works.

The Conference of Public Health Engineers should be held at least once a year.

It is necessary to standardise the qualifications and training of plant operators of different grades in order to bring them under National Certificate Scheme. The Ministry of Health should take the necessary measures in this behalf in consultation with the State Governments.

A common code of practice laying down standards and specifications in design and execution of public health engineering works is an imperative need.

The Central Public Health Engineering Research Institute may intensify research work in regard to the preliminary and secondary treatment of sewage and industrial waste in order to evolve rational design criteria for future adoption.

To foster research work on all problems relating to public health engineering, sufficient money must be ear-marked for operational research.

In view of the responsibilities that the Central Public Health Engineering Organisation has to shoulder, it is essential that its status should be elevated and the head of the organisation should enjoy at least the same status as that of the Chief Engineer in the Central Government.

The personnel of the Central Public Health Engineering Organisation should be periodically inter-changed with State Public Health Engineering officers in order to promote better understanding of each other's view points.

There is an imperative need for stepping up the production of C.I. pipes of the smaller sizes. Side by side, attention should also be paid to step up the manufacture of C.I. specials.

Water meter industry has a great future in the country. It is essential, therefore, that it is built up and promoted on efficient lines in order to get meters of good quality at reasonable cost.

A cheap and durable foolproof device for chlorinating rural water supply should be evolved.

Special emphasis is laid on the need for cheap, simple and robust pump suited for rural water supplies as the success of a rural water supply scheme depends upon the quality of the pump itself.

The hydraulic pressures in the rural distribution system are not normally high and should, therefore, permit the use of pipes of material.

A class of pipe lower than the present 'B' class should be manufactured in order to avoid the use of 'B' class pipes everwhere. A judicious use of spun concrete pipes, wherever possible, will release cast iron pipes for use elsewhere.

Every encouragement must be given for the manufacture of prestressed concrete pipes in the country after laying down suitable standards and specifications in this behalf.

Careful collection of data regarding the daily performance of all existing plants should be enforced as that would be very valuable in designing future expansions and in building new ones elsewhere.

Local bodies should take steps to impose water and drainage tax where they have not done so and strictly collect the same. This would act as an incentive for the house owners to take connections quickly.

The engineers in charge of public health engineering works should use their discretion in designing civil structures with a view to effect maximum economy.

The installation of water supply scheme in any urban areas makes a sewerage scheme for that area inescapable. It is, therefore, necessary to treat national water supply and sanitation schemes as combined utility projects financed on a common basis.

For making the schemes self-supporting the cost must have a practical relation to the paying capacity of the local population. A practical way to keep down the cost would be to design scheme with minimum standards to start with, with provisions for expansion at latest stages.

The method of financing and the agency for executing water supply and sanitation scheme as combined projects will have to be patterned to suit local conditions. Local bodies in the present status cannot undertake this job. It, therefore, becomes necessary that a number of municipalities in a region are given the benefit of the services of a Regional Statutory Water and Sewage Board which would act on behalf of these municipalities in the region, taking over such functions and duties from them as are necessary to work the plan to success.

To foster and develop the growth of public health engineering consultants, it is necessary to frame now itself rules for registration, licensing and conduct of business. The Union Health Ministry should take action in this behalf.

Mapping of water resources in the different parts of the country and laying down policies for its economic and efficient utilisation is a matter of great importance. Equally important is the need for effecting adequate control over pollution of water resources. A broad based Board should be set up for this purpose in each State.

The National Water Supply and Sanitation Programme should not only include selective types of supply for groups of villages from a single source but also rural water supply schemes which involve engineering skill and experience either in the development of the source or in the distribution of the supply and its maintenance.

The Public Health Engineering Department of the State should be effectively associated with the implementation of rural schemes under different programmes in order to achieve efficiency and economy.

The preparation of basic inventory by each State Government of the rural water supply needs, resources and forecasts is essential. It will be desirable to include in the coming National Census operations, collection of comprehensive data on the present status of the rural national water supply and sanitation facilities.

Self-closing taps of robust and approved make should be provided for all stand posts as part and parcel of schemes approved by State and Central Governments, in order to avoid waste of water.

It is desirable that the scope of the national water supply and sanitation programme is modified in order to give more equitable opportunities to urban communities under the loan disbursement. The programme may include a 25 per cent of grant-in-aid for villages or towns with a population between five to twenty thousands. This will give an element of rational in the aid contemplated under the programme and would approximate to a slab system of help to the rural, semi-rural and urban population in the country.

Appendix B-53(a)

STATEMENT SHOWING EXPENDITURE OF MEDICAL COLLEGES AND TEACHING HOSPITALS

A—Medical Colleges

Rs in Lakhs

Name of the State/ Territories	1952-53		1953-54		1954-55		1955-56		1956-57		1957-58		1958-59		1959-60	
	No. of Colleges Reporting	Expenditre	No. of Colleges Reporting	Expenditure	No. of Colleges Reporting	Expenditure	No. of Colleges Reporting	Expenditure	No. of Colleges Reporting	Expenditure	No. of Colleges Reporting	Expenditure	No. of Colleges Reporting	Expenditure	No. of Co'leges Reporting	Exepnditure
I	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Andhra Pradesh	I	5.574	I	5.712	3	13.283	3	17.220	5	20.78	5	31.41	2	12.50	3	19.85
Assam	I	13.743	I	13.944	I	15.425	I	16.978	I	14.80	I	11.30	..	..	..	..
Behar	2	10.143	2	10.338	2	10.565	2	11.585	2	10.41	2	11.42	..	..	..	..
Gujarat	2	8.899	2	19.109	3	11.136	3	32.889	3	15.76	3	15.16	3	39.89	3	22.06
Kerala	I	5.450	I	7.051	I	4.190	I	6.240	I	6.11	2	18.77	2	28.65	2	21.86
Maharashtra	4	19.118	4	21.090	4	21.605	4	22.218	5	24.98	5	24.63	5	67.48	5	64.19
Madhya Pradesh	..	..	..	..	..	..	..	..	3	16 8	3	23.69	2	15.45	2	15.99
Madras	2	11.813	2	11.491	3	16.086	3	26.803	3	20.65	3	24.01	3	30.71	3	30.69
Mysore	..	..	I	2.180	I	5.720	I	8.160	..	..	3	15.60	2	20.10	2	15.49
Orissa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	I	4.39
Punjab	2	12.583	2	11.582	2	12.868	2	13.747	2	10.80	2	17.96	3	23.57	3	25.20
Rajasthan	I	5.111	I	4.685	I	4.840	I	5.435	..	..	I	7.02	I	20.4	I	4.88
Uttar Pradesh	2	20.046	2	19.961	2	21.206	2	24.096	2	24.89	2	27.60	2	26.51	2	29.82
West Bengal	4	24.470	4	26.759	4	26.834	5	28.304	5	29.88	5	31.07	3	19.13	3	19.68
Jammu and Kashmir	..	..	..	..	..	..	..	..	..	..	..	..	I	0.02	I	3.67
Delhi	I	14.446	I	13.900	I	15.574	I	20.272	2	33.08	2	51.37	2	15.43	2	19.79
Pondicherry	..	..	..	..	..	..	..	..	I	2.16	I	3.45	I	7. 5	I	9.16
TOTAL	23	151.396	24	167.808	28	179.332	29	224.037	36	224.56	40	314.46	32	309.23	34	306.72
AVERAGE		6.582		6.992		6.405		7.725		6.02		7.86		9.66		9.02

Appendix B-53

STATEMENT SHOWING EXPENDITURE OF MEDICAL COLLEGES AND TEACHING HOSPITALS

B—Medical Colleges/Hospitals

Name of the State/ Territories	1952-53		1953-54		1954-55		1955-56		1956-57		1957-58		1958-59		1959-60	
	No. of Colleges Reporting	Expenditure	No. of Colleges Reporting	Expenditure	No. of Colleges Reporting	Expenditure	No. of Colleges Reporting	Expenditure	No. of Colleges Reporting	Expenditure	No. of Colleges Reporting	Expenditure	No. of Colleges Reporting	Expenditure	No. of Colleges R porting	Expenditure
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Andhra Pradesh	..	..	..	..	..	..	..	..	1	7.44	1	7.89	3	22.91	3	24.68
Assam	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bihar	2	26.624	2	26.990	2	29.912	2	46.12	2	48.24	2	61.41	..	..	..	..
Gujarat	2	11.752	2	11.439	2	12.127	3	15.41	3	13.79	..	..	3	31.38	3	29.22
Kerala	1	1.680	1	2.520	1	5.690	1	7.97	1	9.98	1	14.21	2	19.06	2	21.05
Maharashtra	4	87.756	4	88.303	4	102.707	4	102.11	4	109.34	4	124.32	4	135.06	4	133.36
Madhya Pradesh	1	4.380	1	5.340	1	6.380	..	..	3	32.33	3	37.04	2	18.32	2	23.38
Madras	3	44.427	3	36.565	3	48.136	..	..	4	72.20	4	85.59	3	70.95	3	80.71
Mysore	..	..	..	..	1	7.840	1	17.00	1	8.97	1	8.03	2	33.09	2	33.10
Orissa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Punjab	2	16.375	3	20.413	3	19.815	3	21.03	3	26.81	3	37.14	3	44.62	3	53.07
Rajasthan	1	9.461	1	12.991	1	12.420	1	12.98	1	16.11	1	18.23	..	..	..	..
Uttar Pradesh	1	14.963	1	15.594	2	27.128	2	30.47	2	34.75	2	34.18	2	37.03	2	37.66
West Bengal	4	75.294	4	88.483	4	112.259	5	98.20	5	101.18	5	105.19	3	84.09	3	90.98
Jammu & Kashmir	1	2.150	1	2.610	1	2.490	..	..	1	4.02	..	..	1	5.64	1	6.32
Delhi	1	19.620	1	17.530	1	21.970	1	29.51	1	32.62	1	33.87	3	80.17	3	119.25
Pondicherry	..	..	..	..	..	..	..	..	..	..	1	17.14	..	..	..	..
TOTAL	23	314.482	24	328.778	26	409.374	23	370.80	32	5 7.78	29	584.24	31	582.32	31	652.78
AVERAGE		13.673		13.699		15.745		16.122		16.18		20.14		18.79		21.06

Appendix B-54

TEACHING HOSPITALS

Comparative Eastimated Data, 1957

	Total Teaching Hospitals	Average Teaching Hospitals
Total Hospitals	125	1
Beds sanctioned	44,814	358
Beds in use	55,121	440
Average Daily occupancy	49,295	391
Per cent Daily occupancy	110%	110%
Average Length Stay (Days)	12%	12%
Total In-patients admitted annually	1,523,676	12,172
Patients admitted (Daily)	4,174	34
Total Births, annual	1,92,700	1,539
Total Deaths, annual	91,421	730
Total Autopsies, annual	10,056	80
Per cent Autopsies	11%	11%
No. Operations, annual	1,173,230	9,372
No. Transfusions, annual	129,055	1,031
No. Laboratory Tests, annual	3,809,190	30,430
No. X-rays, annual	1,371,309	10,955
Total Out-patients, annual	19,514,090	155,730
Average Daily Out-patients	53,463	427
Total Personnel	62,739	501
Total No. doctors	8,407	67
Total No. staff nurses	6,901	55
Total No. student nurses	9,411	7
Total All other	38,020	304
Total all costs, Annual	182 lakhs	11.5 lakh
Cost per patient per day	Rs. 8	Rs. 8

सत्यमेव जयते

Appendix B-55

STATEMENT SHOWING AVERAGE COST PER BED IN TEACHING HOSPITALS (1958)

Name of State	No. of teaching Hospital reporting	Bed Strength	Average diet charge per day	Cost of Medicine per day	Cost of maintaining a Hospital bed per year
Andhra Pradesh	3	4,154	1.49	.83	961
Assam	1	700	1.50	..	1,027
Bihar	2	1,622	.87	.47	3,37

Name of State	No. of teaching Hospital reporting	Bed Strength	Average diet charge per day	Cost of Medicine per day	Cost of maintaining a Hospital bed per year.
Gujarat	3	1,272	1.01	1.00	2,202
Kerala	2	1,677	1.70	N.A.	N.A.
Maharashtra	5	4,118	1.28	1.66	2,772
Madhya Pradesh	4	3,013	1.10	1.11	1,300
Madras	4	3,445	1.05	1.88	1,323
Mysore	3	2,165	2.81	.58	1,256
Orissa	N.A.	N.A.	N.A.	N.A.	N.A.
Punjab	3	1,547	.98	.76	3,463
Rajasthan	N.A.	N.A.	N.A.	N.A.	N.A.
Uttar Pradesh	3	1,946	.87	1.54	2,688
West Bengal	5	3,182	1.29	.81	2,185
Delhi	3	1,520	.99	1.99	3,139
Pondicherry	1	112	N.A.	N.A.	584
Jammu & Kashmir	1	325	.95	N.A.	N.A
TOTAL	43	30,798	..	..	..
AVERAGE	..	716	1.28	1.15	2,021

Appendix B-56

STATEMENT SHOWING ADMISSIONS TO UNDER-GRADUATE COURSES, AND NUMBER OF SCIENCE GRADUATES AND WOMEN STUDENTS ADMITTED

ADMISSIONS TO M. B. B. S. COURSE

Name of the State	1954-55		1955-56		1956-57		1957-58		1958-59		1959-60	
	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions
1	2	3	4	5	6	7	8	9	10	11	12	13
Andhra Pradesh	3	240	3	289	5	371	4	341	4	413	4	585
Assam . .	1	74	1	76	1	100	1	100	..	..	..	..
Bihar . .	2	173	2	223	2	221	2	231	..	..	..	..
Gujarat .	2	160	3	220	3	220	3	220	3	220	3	220
Kerala . .	..	..	..	..	..	..	1	50	2	178	2	230
Maharashtra .	5	459	5	484	6	570	6	528	5	484	5	568
Madhya Pradesh	2	112	4	235	4	297	4	357	2	187	2	175
Madras .	3	356	3	356	3	368	3	386	3	287	3	280
Mysore . .	2	185	3	305	3	308	3	369	3	410	3	421
Orissa . .	..	..	..	..	..	..	..	..	..	..	1	49
Punjab .	3	186	3	183	3	211	3	218	3	271	3	293
Rajasthan	1	80	1	86	1	85	1	91	..	..	1	50
Uttar Pradesh	2	223	3	324	3	323	3	321	2	219	2	246
West Bengal .	4	573	4	524	4	534	4	534	3	397	3	338
Delhi . .	1	41	1	49	2	120	2	130	3	180	3	201
Pondicherry .	..	..	..	..	1	17	1	50	1	49	1	49
Jammu and Kashmir	..	..	..	..	..	..	..	..	..	..	1	66
TOTAL .	31	2,862	36	3,354	41	3,745	41	3,926	34	3,295	37	3,871
AVERAGE .		92		93		91		96		97		102

SCIENCE GRADUATES ADMITTED

Name of the States	1954-55		1955-56		1956-57		1957-58		1958-59		1959-60	
	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions
1	14	15	16	17	18	19	20	21	22	23	24	25
Andhra Pradesh	1	2	2	8	4	30	4	25	3	142	2	147
Assam . .	1	4	1	3	1	4	1	6	..	..	..	..
Bihar . .	2	44	2	65	2	47	2	30	..	..	..	..
Gujarat .	2	9	2	9	2	6	2	6	1	1	1	1
Kerala . .	1	18	1	16	1	28	1	26	2	27	2	99
Maharashtra .	3	28	3	43	3	35	2	17	2	30	3	39
Madhya Pradesh . .	1	3	2	24	2	19	3	59	..	..	..	..
Madras .	3	32	4	32	4	36	4	33	2	14	2	13
Mysore . .	1	40	2	62	2	72	3	56	1	16	1	13
Orissa . .	..	..	..	..	..	..	..	..	..	..	1	10
Punjab .	3	128	3	121	3	153	3	156	..	..	..	..
Rajasthan .	1	4	1	9	1	10	1	15	..	..	1	3
Uttar Pradesh	2	83	2	99	2	105	2	120	2	85	1	95
West Bengal .	2	66	4	76	4	47	4	62	2	19	3	15
Delhi . .	1	3	1	3	2	7	3	20	2	9	2	12
Pondicherry .	..	..	..	..	1	11	1	8	1	10	1	2
Jammu and Kashmir .	..	..	..	..	..	..	..	..	..	..	1	5
TOTAL .	24	464	30	570	34	610	36	639	18	353	21	454
AVERAGE .		19		19		18		18		20		22

WOMEN STUDENTS ADMITTED

Name of the State	1954-55		1955-56		1956-57		1957-58		1958-59		1959-60	
	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions	No. of Colleges Reporting	Admissions
1	26	27	28	29	30	31	32	33	34	35	36	37
Andhra Pradesh	3	56	3	63	4	88	5	114	4	86	4	128
Assam . .	1	8	1	4	1	9	1	8	..	..	..	..
Bihar . .	2	25	2	30	2	29	2	36	..	..	..	..
Gujarat .	3	15	3	40	3	32	3	54	2	19	2	26
Kerala . .	1	19	1	19	1	20	2	47	2	60	2	63
Maharashtra .	5	96	5	125	6	156	6	150	5	194	5	217
Madhya Pradesh.	2	26	3	60	4	65	4	91	2	45	2	35
Madras .	3	72	4	88	4	100	4	119	3	88	2	89
Mysore . .	2	26	3	40	3	35	4	51	3	64	3	71
Orissa . .	..	..	..	..	..	..	..	..	..	..	..	9
Punjab . .	3	52	3	50	3	56	3	58	3	64	3	70
Rajasthan .	..	..	..	..	..	..	..	..	..	..	1	11
Uttar Pradesh	3	70	3	68	3	69	3	68	2	42	2	45
West Bengal .	3	55	3	52	3	52	3	84	3	67	3	72
Delhi . .	1	50	1	60	2	70	2	75	3	103	3	122
Pondicherry .	..	..	..	..	1	4	1	8	1	10	1	11
Jammu and Kashmir	..	..	..	..	..	..	..	..	..	..	1	17
TOTAL .		570	35	699	40	785	43	963	32	842	35	986
AVERAGE .		18		20		20		23		26		28

Appendix B-57

List of Medical Colleges in India.

Sl. No.	Year in which established	Name of Medical College
1	1835	The Medical College, Calcutta.
2	1845	The Grant Medical College, Bombay.
3	1850	The Madras Medical College, Madras.
4	1911	The King George's Medical College, Lucknow.
5	1916	The Lady Hardinge Medical College, New Delhi.
6	1916	The R. G. Kar Medical College, Calcutta.
7	1921	T. N. Medical College, Bombay.
8	1923	The Andhra Medical College, Vishakhapatnam.
9	1924	The Medical College, Mysore.
10	1925	The Seth G. S. Medical College, Parel, Bombay.
11	1925	The Prince of Wales Medical College, Patna.
12	1926	The Osmania Medical College, Hyderabad-Dn.
13	1938	The Stanely Medical College, Madras.
14	1939	The Medical College, Agra.
15	1942	The Christian Medical College, Vellore.
16	1943	The Medical College, Amritsar.
17	1944	The Sriram Chandra Bhunj Medical College, Cuttack.
18	1946	The B. J. Medical College, Poona.
19	1946	G. R. Medical College, Gwalior.
20	1946	B. J. Medical College, Ahmedabad.
21	1946	The Darbhanga Medical College, Laheriasarai.
22	1946	The Guntur Medical College, Guntur.
23	1947	S. M. S. Medical College, Jaipur.
24	1947	The Medical College, Nagpur.
25	1947	The Assam Medical College, Dibrugarh.
26	1948	The Calcutta National Medical Institute, Calcutta.
27	1948	The Nilratan Sircar Medical College, Calcutta.
28	1948	M. G. M. Medical College, Indore.
29	1949	Medical College, Baroda
30	1951	The Medical College, Trivandrum.
31	1953	The Government Medical College, Patiala.
32	1953	The Christian Medical College, Ludhiana.
33	1953	The Kasturba Medical College, Manipal.
34	1954	The Madurai Medical College, Madurai.
35	1954	The Gandhi Medical College, Hyderabad-Dn.
36	1955	G. S. V. M. Medical College, Kanpur.
37	1955	The Banaglore Medical College, Bangalore.
38	1955	The Gandhi Medical College, Bhopal.
39	1955	The Medical College, Jabbulpur.
40	1955	M. P. Shah Medical College, Jamnagar.
41	1955	The Medical College, Ranchi.

Sl. No.	Year in which established	Name of Medical College
42	1956	The Kurnool Medical College, Kurnool.
43	1956	The Medical College, Pondicherry.
44	1956	All India Institute of Medical Sciences, New Delhi.
45	1956	The Bankura Sammilini Medical College, Bankura.
46	1956	The Government Medical College, Aurangabad.
47	1957	The Karnatak Medical College, Hubli.
48	1957	The Medical College, Calicut.
49	1958	The Maulana Azad Medical College, New Delhi.
50	1958	Tanjore Medical College, Tanjore.
51	1958	S. R. M. Medical College, Kakinada.
52	1959	The Medical College, Srinagar.
53	1959	Bikaner Medical College, Bikaner.
54	1959	The Medical College, Burla (Sambalpur).
55	1959	Medical College, Warangal.
56	1960	The College of Medical Sciences, Varanasi.
57	1960	The Medical College, Rohtak.
58	1960	Gauhati Medical College, Gauhati.
59	1960	Sri Venkataswara Medical College, Tirupati, Distt. Chittoor.
60	1960	The Kilpauk Medical College, Kilpauk, Madras-10.
61	1961	Motilal Nehru Medical College, Allahabad.

Appendix B-58

Admissions and Out-turn of the Medical Colleges in India (1948-60) and Projection upto 1980

Year	Colleges	Admissions	Out-turn	
1948	28	2,710	..	
1949	29	2,770	..	
1950	29	2,770	..	
1951	30	2,854	..	
1952	31	2,972	..	
1953	33	3,104	..	
1954	34	3,174	..	
1955	52	3,655	..	
1956	45	3,815	2,487	
1957	48	4,003	2,631	
1958	52	4,501	2,743	
1959	53	4,794(Actual)	2,809	
1960	53	4,794(Assumption)	3,124	
1961	*56	5,725	3,319	*3 new colleges 1 00 each

Year	College	Admissions	Out-turn	
1962	59	6,656	3,482	Expansion of existing colleges to give 150 admissions.
1963	62	7,587	3,860	
1964	65	8,519	4,157	931
1965	68	9,450	4,234	19052
1966	71	9,900	4,831	
1967	74	10,350	5,589	Colleges of 100 admissions: 300
1968	77	10,708	6,318	each year expansion of 3
1969	80	11,150	7,140	colleges of 100, 150. Total : 450.
1970	83	11,900	8,030	each year 3 colleges of 100
1971	86	12,050	8,582	admissions per college: 300
1972	89	12,500	9,033	
1973	91	12,950	9,494	
1974	94	13,400	9,839	Expansion of 3 colleges each to have 150 total : 450 each year.
1975	97	13,850	10,224	
1976	..	..	10,629	
1977	..	..	11,024	
1978	..	..	11,439	
1979	..	..	11,834	
1980	..	..	11,239	57,165

Appendix B-59

STATEWISE DISTRIBUTION OF DOCTORS

Zone	Population in 1956 (Million)	No. of doctors (all) residing in the State in 1956	Estimated active doctors	Doctors (active) per million population in 1956
Western				
Bombay	53.11	13,945	12,676	238
Mysore	21.54	3,167	2,878	133
	74.65	17,112	15,554	208
Southern				
Kerala	15.17	1,807	1,642	108
Madras	32.58	6,495	5,903	181
Andhra	33.81	4,227	3,842	113
Pondicherry	0.56	..	..	..
Andeman & Nicobar	0.04	..	..	..
Laccadive & Minicoy	0.04	..	..	..
	82.20	12,529	11,387	138

Zone	Population in 1956 (Million)	No. of doctors (all) residing in the State in 1956	Estimated active doctors	Doctor (active) per million population in 1956
Northern				
Punjab	17.76	3,261	2,962	167
Jammu & Kashmir	4.78	81	73	15
Rajasthan	17.56	717	651	37
Himachal Pradesh	1.12	79	71	63
Delhi	2.12	1,332	1,210	571
	43.31	5,470	4,969	112
Eastern				
Assam	9.88	2,884	2,621	..
West Bengal	27.64	17,836	16,212	586
Bihar	41.38	5,445	4,949	119
Orissa	15.36	1,342	1,219	79
Manipur & Tripura	1.28	214	194	151
	95.54*	27,721	25,195	274
Central				
Madhya Pradesh	27.64	2,066	18,877	68
Uttar Pradesh	67.82	6,702	6,092	89
	95.46	8,768	7,969	83
Country	391.81	71,600	65,074	166

*Excludes population for Naga Hills.

Statement showing Statewise information regarding the number of Registered-Medical Practitioners (Graduates and Licentiates) for the year 1959 received so far.

Name of State	Graduates	Licentiates	Total	Remarks
Andhra Pradesh	2,868	861	3,229	
Assam	853	2,260	3,113	
Bihar	3,171	3,116	6,287	
Bombay	10,891	5,094	15,985*	*Information for 1958 received from Bombay Medical Council.
	28	295	323††	††Information for 1958 in respect of Vidarbha Medical Council.

Name of State	Graduates	Licentiates	Total	Remarks
Jammu & Kashmir	67	82	149	
Kerala	..	925	925	
Madras	7,032	4,581	11,613	
Madhya Pradesh	..	78	78	Information received from the Mahakoshal Medical Council, Indore.
	51	29	80	Information for 1958 received from Bhopal Medical Council.
Mysore	..	3,505	3,505	
Orissa	655	777	1,432	
Punjab	2,688	2,758	5,446	
Rajasthan	+	+	+	
Uttar Pradesh	4,648	3,094	7,742	
West Bengal	8,476	14,247	22,723	
Andaman & Nicobar Islands	11	9	20	
Delhi Municipal Corporation	..	742	742	
Delhi Administration	+	+	+	
Himachal Pradesh	60	51	111	
Manipur	19	29	48	
Tripura	+	+	+	
Pondicherry	..	53	53	
Laccadive Minicoy & Amindive Islands.	7	..	7	Information for 1958

NOTE.—+Information not received.

Appendix B-60(a)

Average age, qualification, Experience and hours of teaching of the College Departmental Staff (Statewise)

	No. of Colleges reporting	No. of persons	Average age	No. with Post-graduate qualification	Average teaching experience (year)	Average Research Experience (year)	No. of hours of teaching per week	
							Teaching only	Research & teaching
1	2	3	4	5	6	7	8	9
I. Department of Anatomy								
Andhra Pradesh :	5							
Professors		5	46	5	16	3	..	7
Asstt. Profs.		3	43	1	16	1	..	12
Lecturers*		31	29	1	2	..	6	3
Others		..	..	..	..	..	..	..

* Includes Demonstrators, Registrars and Tutors.

1	2	3	4	5	6	7	8	9	
Bihar :	2								
Professors . . .		3	49	2	22	3	18	8	
Lecturers . . .		12	31	6	5	1	17	4	
Gujarat :	3								
Professors . . .		3	41	2	14	..	3	3	
Lecturers . . .		15	34	7	5	..	4	11	
Kerala	2								
Professors . . .		2	50	2	18	..	19	..	
Asstt. Profs. . .		1	41	1	8	1	21	..	
Lecturers . . .		10	27	1	1	..	15	..	
Madhya Pradesh :	3								
Professors . . .		3+1*	39	3	15	3	8	5	*Information not available
Asstt. Profs. . .		1+1*	NA	1	5	..	..	12	
Lecturers . . .		15+2*	32	2	4	1	9	6	
Others . . .		1	34	..	4	..	33	..	
Madras :	3								
Professors . . .		3	51	3	22	..	2	..	
Asstt. Profs. . .		1	54	1	20	..	..	..	
Lecturers . . .		15	33	..	5	..	7	..	
Maharashtra :	4								
Professors . . .		4	47	NA	15	NA	NA	NA	
Asstt. Profs. . .		1	29	NA	7	NA	NA	NA	
Lecturers . . .		30	31	2	4	NA	NA	NA	
Mysore :	2								
Professors . . .		2	56	2	29	..	7	..	
Asstt. Profs. . .		2	51	1	19	..	6	..	
Lecturers . . .		8	27	3	1	..	9	..	
Others . . .		5	26	..	..	..	2	..	
Orissa :	1								
Professors . . .		1	51	1	14	..	..	21	
Asstt. Profs. . .		1	38	1	7	3	..	22	
Lecturers . . .		3	25	1	6	..	18	..	
Punjab :	3								
Professors . . .		3	42	3	14	..	..	16	*Information not available
Asstt. Profs. . .		3+1*	35	2	10	NA	NA	34	
Lecturers . .		18	39	2	3	NA	NA	NA	
Rajasthan :	2								
Professors . . .		2	45	2	20	..	1	8	
Lecturers . . .		11	30	5	4	..	3	13	
Uttar Pradesh :	3								
Professors . . .		3	NA	NA	NA	NA	NA	NA	
Lecturers . . .		27	NA	NA	NA	NA	NA	NA	

1	2	3	4	5	6	7	8	9
West Bengal :	3							
Professors . . .		3	57	3	24	..	21	..
Asstt. Profs. . .		4	52	..	17	..	24	..
Lecturers . . .		19	32	..	5	..	24	..
Delhi Admn. :	2							
Professors . . .		2	38	2	12	8	..	12
Lecturers . . .		10	33	5	5	2	..	15
	II. Department of Physiology							
Andhra Pradesh :	3							
Professors . . .		4	47	4	18	..	N.A.	..
Addl. Profs. . .		1	39	1	11	..	..	12
Lecturers . . .		27	34	2	4	..	2	..
Bihar : . . .	2							
Professors . . .		2	42	1	16	..	..	14
Lecturers . . .		7	34	4	6	..	..	16
Gujarat : . . .	3							
Professors . . .		3	49	3	16	5	3	..
Lecturers . . .		16	34	4	9	..	..	3
Kerala : . . .	2							
Professors . . .		2	34	2	2	..	NA	NA
Lecturers . . .		10	27	1	1	..	NA	NA
Madhya Pradesh : .	4							
Professors . . .		3+1*	44	3	19	3	3	9
Asstt.' Profs. . .		2+1*	N.A.	2	18	..	..	18
Lecturers . . .		15+2*	33	7	5	..	13	7
Madras :	3							
Professors . . .		4	43	4	10	..	3	..
Asstt. Profs. . .		1	32	1	8	..	17	..
Lecturers . . .		14	33	..	4	..	1	..
Maharashtra :	4							
Professors . . .		5	43	5	15	N.A.	N.A.	N.A.
Asstt. Profs. . .		3	46	3	18	N.A.	N.A.	N.A.
Lecturers . . .		27	34	9	5	N.A.	N.A.	N.A.
Mysore :	2							
Professors . . .		3	46	2	15	..	16	..
Asstt. Profs. . .		1	60	..	24	..	18	..
Lecturers . . .		15	29	2	2	..	17	..
Orissa :	1							
Professors . . .		1	39	1	10	3	11	..
Lecturers . . .		3	31	1	4	..	14	..

*Information not available.

1	2	3	4	5	6	7	8	9	
Punjab :	3								
Professors . .		3	49	3	16	N.A.	..	38	
Asstt. Prof. . .		6	47	3	5	..	..	38	
Lecturers . . .		21	28	3	5	..	..	38	
Rajasthan :	2								
Professors . . .		2	43	2	13	10	..	13	
Lecturers . . .		10	33	6	7	1	..	3	
Uttar Pradesh :	3								
Professors . . .		1+2*	37	1	14	N.A.	N.A.	N.A.	*Information not available
Lecturers . . .		28	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
West Bengal :	2								
Professors . . .		2	59	..	25	..	22	..	
Asstt. Profs . .		2	42	..	9	..	13	..	
Lecturers . .		9	37	..	7	..	12	..	
Delhi Admn. :	2								
Professors . . .		2	43	2	15	13	..	13	
Lecturers . . .		16	32	5	3	..	..	10	

III. Department of Bacteriology

1	2	3	4	5	6	7	8	9	
Andhra Pradesh :	3								
Professors . . .		2	45	2	10	5	7	5	
Lecturers . . .		10	30	1	2	..	10	1	
Bihar :	Nil.								
Gujarat* :	1	*(includes Pathology Department)							
Professors . . .		1	48	1	22	..	..	4	
Asstt. Profs . .		9	31	4	5	..	5	..	
Kerala :									
Professors . . .	1	1	62	1	24	..	..	4	
Lecturers . .		1	27	N.A.	N.A.	N.A.	N.A.	4	
Madhya Pradesh* :	2	*(one of the colleges reported only reg-part-time staff)							
Professors . . .		2	39	2	15	5	13	8	
Asstt. Profs . .		2	33	2	8	..	11	..	
Lecturers . .		10	29	2	3	..	12	..	
Others . . .		5	31	3	1	..	9	..	
Madras :	3								
Professors . . .		2	45	2	16	..	6	..	
Asstt. Profs . .		1	44	..	14	..	6	..	
Lecturers . . .		4	31	1	4	3	..	..	
Maharashtra* :	*3		*(includes Pathology Deptt.)						
Professors . . .		3	44	3	14	N.A.	N.A.	N.A.	*information not available.
Asstt. Profs . .		6	31	6	6	N.A.	N.A.	N.A.	
Lecturers. . .		14+3*	29	3	2	N.A.	N.A.	N.A.	
Others . . .		4	27	N.A.	N.A.	N.A.	N A	N.A.	

Mysore, Orissa, Punjab, Rajasthan, Uttar Pradesh and West Bengal have no departments.

1	2	3	4	5	6	7	8	9
Delhi Admn. :	1							
Professors . . .		1	49	1	11	..	..	7
Lecturers . . .		6	28	2	2	..	..	7

IV. Department of Pathology

1	2	3	4	5	6	7	8	9
Andhra Pradesh :	3							
Professors . . .		2	28	2	9	9	..	8
Lecturers. . . .		13	31	2	4	2	7	..
Others . . .		1	43	..	2	..	12	..
Bihar :	2							
Professors . . .		1	52	1	17	..	..	6
Lecturers . . .		13	35	5	6	..	6	9
Gujarat :	1							
Professors . . .		1	37	1	11	..	..	2
Lecturers . . .		5	32	1	6	..	5	..
Kerala :	1							
Professors . . .		1	56	1	25	..	4	..
Lecturers . .		1	28	..	2	N.A.	N.A.	N.A.
Others . . .		1	34	..	2	N.A.	N.A.	N.A.
Madhya Pradesh :	2							
Professors . . .		1+1*	37	1	12	..	21	.. *information not available.
Asstt. Profs . .								
Lecturers . . .		3+7*	34	2	3	..	15	..
Others . . .		2	29	..	2	..	8	..
Madras :	3							
Professors . . .		3	45	3	14	..	4	..
Asstt. Profs . .		2	37	2	9	N.A.	N.A.	N.A.
Lecturers . . .		15	29	2	3	..	4	..
Maharashtra :	2							
Professors . . .		1	52	1	27	N.A.	N.A.	N.A.
Lecturers . . .		7	31	3	5	N.A.	N.A.	N.A.
Mysore :	1							
Professors . . .		1	50	1	23	..	2	..
Asstt. Profs . .		1	38	..	6	..	10	..
Lecturers . . .		2	30	..	1	..	10	..
Orissa :	Nil							
Punjab :	3							
Professors . . .		3	49	3	14	N.A.	N.A.	N.A.
Asstt. Profs . .		6	35	6	16	N.A.	N.A.	N.A.
Lecturers . . .		15	36	3	3	N.A.	N.A.	N.A.
Others . . .		1	41	1	N.A.	N.A.	N.A.	N.A.
Rajasthan :	1							
Professors . . .		1	45	1	12	..	..	15
Lecturers . . .		7	35	4	5	2	2	13

1	2	3	4	5	6	7	8	9	
Uttar Pradesh :	3								
Professors . . .		3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Lecturers . . .		27	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
West Bengal :	3								
Professors . . .		3	42	3	18	N.A.	13	2	
Asstt. Profs. . .		2	48	1	18	N.A.	N.A.	N.A.	
Lecturers . . .		18	N.A.	..	7	N.A.	N.A.	N.A.	
Delhi Admn. :	1								
Professors . . .		1	43	1	6	..	..	10	
Lecturers . . .		9	31	2	3	..	..	4	
V. Department of Pharmacology									
Andhra Pradesh :	4								
Professors . . .		3	39	3	10	3	3	6	
Asstt. Profs. . .		1	28	1	3	..	..	7	
Lecturers . . .		8	34	2	6	..	1	5	
Others . . .		1	29	..	4	..	5	..	
Bihar :	2								
Professors . . .		1	37	1	11	..	..	28	
Lecturers . . .		11	31	7	4	..	..	32	
Gujarat :	2								
Professors . . .		2	39	2	11	..	..	4	
Lecturers . . .		9	32	6	5	..	1	6	
Kerala :	2								
Professors . . .		1+1*	40	1	6	N A.	N.A.	N.A.	*Information not available
Lecturers . . .		6	28	..	2	N.A.	N.A.	N.A.	
Madhya Pradesh :	3								
Professors . . .		2+1*	40	1	11	10	18	9	*Information not available.
Asstt. Profs. . .		1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Lecturers . . .		5+7	28	1	3	1	2	5	
Madras :	3								
Professors . . .		3	44	3	14	2	2	4	
Lecturers . . .		4	43	..	6	..	7	..	
Others . . .		3	31	..	N.A.	..	3	N.A.	
Maharashtra :	4								
Professors . . .		4	43	3	11	..	..	12	
Asstt. Profs. . .		3	29	1	3	5	..	..	
Lecturers . . .		18	31	6	4	..	..	2	
Others . . .		4	26	2	1	..	..	9	
Mysore :	1								
Professors . . .		1	59	1	27	..	9	..	
Asstt. Profs. . .		1	40	..	6	..	2	2	
Lecturers . . .		1	33	..	..	..	8	..	

1	2	3	4	5	6	7	8	9
Orissa :	Nil.							
Punjab :	3							
Professors		3	49	3	19	..	..	4
Asstt. Profs.		3	37	2	11	N.A.	N.A.	5
Lecturers		15	32	2	2	..	..	4
Others		4	30	3	3	..	20	2
Rajasthan :	1							
Professors		1	35	1	9	..	..	6
Lecturers		4	29	4	4	..	..	6
Uttar Pradesh :	3							
Professors		2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Lecturers		16	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
West Bengal :	3							
Professors		3	45	3	13	..	15	..
Asstt. Profs.		1	43	..	5	..	12	..
Lecturers		8	38	1	10	..	31	..
Delhi Admn. :	1							
Professors		1	44	1	20	..	..	4
Lecturers		5	29	1	4	..	..	5

VI. Social and Preventive Medicine

1	2	3	4	5	6	7	8	9	
Andhra Pradesh :	4								
Professors		4	54	2	14	..	1	2	
Asstt. Profs.		2+1*	34	..	6	..	9	..	*One post vacant
Lecturers		1	35	..	5	..	..	..	
Bihar :	1								
Professors		1	45	1	10	3	..	..	
Gujarat.	3								
Professors		3	48	..	4	..	1	3	
Lecturers		3	31	2	6	..	6	1	
Kerala :	2								
Professors		2	50	1	3	..	4	..	
Lecturers		5	52	1	1	..	2	..	
Others		2	23	1	N.A.	..	N.A.	N.A.	
Madhya Pradesh :	4								
Professors		3+1*	41	..	2	..	..	14	*Information not available.
Lecturers		2	34	..	1	..	..	12	
Madras :	3								
Professors		3	48	3	4	..	6	..	
Asstt. Profs.		2	47	..	3	..	12	..	
Lecturers		1	38	1	8	..	22	..	
Others		2	39	1	4	..	92	..	

1	2	3	4	5	6	7	8	9
Maharashtra :	4							
Professors . . .		3	46	3	8	N.A.	N.A.	N.A.
Asstt. Profs. . .		1	35	1	2	..	..	..
Lecturers. . . .		8	36	3	12	..	..	..
Others . . .		1	28	1	..	..	..	..
Mysore :	2							
Professors . . .		2	49	..	5	..	5	..
Asstt. Profs. . .		1	29	..	..	..	1	..
Lecturers . . .		1	32	..	N.A.	N.A.	N.A.	N.A.
Orissa :	**Nil.**							
Punjab :	3							
Professors . . .		1	43	1	3	..	..	..
Asstt. Profs. . .		1	40	1	4	..	..	..
Lecturers . . .		5	40	2	1	N.A.	N.A.	N.A.
Rajasthan :	1							
Lecturers . . .		4	28	1	5	..	..	2
Uttar Pradesh :	2							
Professors . . .		2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Lectures . . .		6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
West Bengal :	3							
Professors . . .		4	48	3	12	..	9	N.A.
Asstt. Profs. . .		1+1*	42	1	12	..	4	..
Lecturers		1	31	..	..	..	3	..
Delhi :	1							
Lecturers . . .		2	34	2	4	..	..	2

*Information not available.

VII. Medicine

1	2	3	4	5	6	7	8	9
Andhra Pradesh :	4							
Professors . . .		12	41	12	9	..	6	3
Asstt. Profs. . .		5	36	5	5	..	2	8
Lecturers . . .		22	29	3	2	..	..	4
Bihar :	2							
Professors . . .		2	50	2	13	..	5	6
Lecturers . . .		6	40	6	7	..	..	12
Gujarat :	1							
Lecturers . . .		3	40	3	6	..	18	..
Kerala :	2							
Professors . . .		2	58	2	8	..	12	9
Asstt. Profs. . .		6	46	4	6	..	3	..
Lecturers . . .		4	28	1	2	..	15	..

1	2	3	4	5	6	7	8	9
Madhya Pradesh :	4							
Professors . . .		3+1*	43	3	16	15	7	12 *Information not available.
Asstt. Profs. . .		2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Lecturers . . .		21	30	14	4	2	4	11
Madras :	3							
Professors . . .		4	42	4	16	..	11	N.A.
Asstt. Profs. . .		6	32	6	5	N.A.	N.A.	N.A.
Lecturers . . .		15	35	6	4	N.A.	N.A.	N.A.
Maharashtra :	2							
Professors . . .		1	41	1	12	17	24	..
Lecturers . . .		22	35	15	8	2	13	N.A.
Others . . .		3	30	1	3	..	11	..
Mysore :	2							
Professors . . .		2	47	2	11	6	9	..
Asstt. Profs. . .		2	34	1	1	4	1	N.A.
Lecturers . . .		2	N.A.	..	1	5	..	N.A.
Orissa :	Nil							
Punjab :	2							
Professors . . .		2	47	3	9	N.A.	N.A.	21
Asstt. Profs. . .		3	33	1	5	N.A.	N.A.	20
Lecturers . . .		8	27	2	5	N.A.	N.A.	4
Rajasthan :	1							
Professors . . .		1	52	1	18	..	N.A.	..
Asstt. Profs. . .		2	49	2	10	N.A.	N.A.	N.A.
Lecturers . . .		9	32	9	2	2	N.A.	..
Uttar Pradesh :	2							
Professors . . .		3						
Asstt. Profs . .		28	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
West Bengal :	2							
Professors . . .		3	N.A.	3	10	N.A.	N.A.	N.A. *Information not available.
Asstt. Profs. . .		7	N.A.	7	9	N.A.	N.A.	N.A.
Lecturers . . .		6	38	3	8	N.A.	N.A.	N.A.
Others . . .		10+2*	N.A.	4	5	N.A.	N.A.	N-A.
Delhi :	1							
Professors . . .		1	40	1	9	..	5	..
Clinical Profs. . .		2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Lecturers . . .		3	39	2	6	8	5	1

VIII. Surgery

1	2	3	4	5	6	7	8	9
Andhra Pradesh :	3							
Professors . . .		6	47	6	14	..	20	..
Adl. Profs . . .		11	38	9	8	..	13	..
Lecturers . . .		16	34	5	4	..	12	..

1	2	3	4	5	6	7	8	9	
Bihar :	2								
Professors . . .		2	45	2	18	N.A.	N.A.	12	
Lecturers . . .		15	41	11	9	N.A.	N.A.	13	
Gujarat :	1								
Professors . . .		1	54	1	23	..	4	..	
Lecturers . . .		2	32	2	5	..	18	..	
Kerala :	2								
Professors . . .		2	56	2	15	N.A.	10	N.A.	
Asstt. Profs. . .		12	38	5	N.A.	N.A.	N.A.	N.A.	
Lecturers . . .		10	30	2	N.A.	N.A.	N.A.	N.A.	
Madhya Pradesh :	4								
Professors . . .		3+1*	44	3	15	2	13	8	*Information not available.
Asstt. Profs. . .		2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Lecturers . . .		27+4*	32	11	4	..	6	6	
Others . . .		2	44	N.A.	N.A.	N.A.	N.A.	N.A.	
Madras :	3								
Professors . . .		4	49	4	20	N.A.	N.A.	N.A.	
Asstt. Profs. . .		9	32	9	3	N.A.	N.A.	N.A.	
Lecturers . . .		17	34	4	3	..	N.A.	..	
Maharashtra* :	2	**One college reported in respect of part time staff only.							
Professors . . .		1	32	1	7	5	12	4	
Lecturers . . .		19	35	16	6	N.A.	N.A.	N.A.	
Others . . .		1	50	..	9	..	..	..	
Mysore :	1								
Professors . . .		1	53	1	17	..	8	..	
Adl. Profs. . .		2	37	2	6	..	6	6	
Lecturers . . .		2	31	..	..	..	4	4	
Orissa :	Nil.								
Punjab :	3								
Professors . . .		8	47	8	10	N.A.	N.A.	6	
Asstt. Profs. . .		4	45	4	10	N.A.	N.A.	7	
Lecturers . . .		18	33	7	3	N.A.	N.A.	5	
Others . . .		5	38	1	4	N.A.	N.A.	N.A.	
Rajasthan :	1								
Professors . . .		1	53	1	10	..	37	..	
Clinical Profs. . .		1	44	1	11	..	8	..	
Lecturers . . .		8	35	6	3	..	7	..	
Uttar Pradesh	3								
Professors . . .		2+3*	51	2	17	..	N.A.		*Information not available
Lecturers . . .		30	..	N.A.	..	..	..		
Others . . .		5	..	N.A.	..	..	..		

1	2	3	4	5	6	7	8	9	
West Bengal :	2								
Professors . . .		5+2*	N.A.	3	16	N.A.	14	N.A.	
Asstt. Profs. . .		4+1*	35	2	4	..	14	..	
Lecturers . . .		4+3*	39	1	15	..	N.A.	..	
Others . . .		6+9*	46	2	14	..	12	..	
Delhi :	2								
Professors . . .		2	44	2	15	2	..	5	*Information not available.
Clinical Profs. . .		1	38	1	14	..	..	18	
Lecturers . . .		5+6*	32	4	2	..	4	11	
IX. Obsteteries and Gynecology									
Andhra Pradesh : .	2								
Professors . . .		1	39	1	16	3	3	..	*Information not available
Asstt. Profs. . .		1	69	1	43	3	3	..	
Lectueres . . .		4+3*	32	..	..	N.A.	N.A.	N.A.	
Bihar :	2								
Professors . . .		3	50	3	10	..	1	2	
Lecturers . . .		7	42	2	9	..	1	1	
Gujarat :	1								
Professors . . .		1	42	..	9	..	4	..	
Lecturers . . .		1	N.A.	1	5	..	18	..	
Kerala :	1								
Professors. . .		1	49	1	5	..	8	..	
Asstt. Profs. . .		2	40	2	9	..	6	..	
Lecturers . . .		3	29	1	1	N.A.	N.A.	N.A.	
Madhya Pradesh :	4								
Professors . . .		3+1*	48	3	9	5	20	9	*Information not available.
Asstt. Profs. . .		1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Lecturers . . .		12+3*	29	5	3	..	20	1	
Madras :	3								
Professors . . .		3	50	3	16	N.A.	N.A.	N.A.	
Asstt. Profs. . .		7	33	4	4	N.A.	N.A.	N.A.	
Lecturers . . .		9	32	4	2	N.A.	N.A.	N.A.	
Maharashtra * :	2	*One college reported only in respect of part time staff.							
Professors . . .		1	42	1	9	..	8	..	
Lecturers . . .		11	34	6	7	N.A.	N.A.	N.A.	
Others . . .		2	30	N.A.	N.A.	N.A.	N.A.	N.A.	
Mysore :									
Professors . . .	1	1	36	1	2	..	4	..	
Asstt. Profs. . .		1	37	1	8	..	6	..	
Lecturers . . .		1	50	..	3	..	7	..	
Orissa :	Nil.								

1	2	3	4	5	6	7	8	9
Punjab :	3							
Professors . . .		3	45	3	11	N.A.	N.A.	N.A.
Asstt. Profs. . .		4	48	4	3	N.A.	N.A.	N.A.
Lecturers . . .		7	33	1	2	N.A.	N.A.	N.A.
Rajasthan :	1							
Professors . . .		1	49	1	6	2	..	5
Lecturers . . .		4	36	1	7	..	..	5
Uttar Pradesh :	3	*Information not available.						
Professors . . .		1+2*	57	1	19	N.A.	N.A.	N.A.
Lecturers . . .		6+10*	32	5	3	N.A.	N.A.	N.A.
West Bengal :	3							
Professors . . .		6	51	6	17	..	16	..
Asstt. Profs. . .		3	N.A.	2	11	..	N.A.	..
Others . . .		1	32	N.A.	N.A.	N.A.	12	..
Delhi :	1							
Professors . . .		1	44	1	16	7	..	21
Clinical Profs. . .		1	41	1	11	..	16	..
Lecturers . . .		4	39	4	8	1	8	..

X. *Ophthalmology*

1	2	3	4	5	6	7	8	9
Andhra Pradesh :	3							
Professors . . .		2	49	2	21	..	12	2
Lecturers . . .		7	37	3	10	..	7	1
Bihar :		Nil.						
Gujarat :		Nil.						
Kerala :	1							
Professors . . .		1	57	..	..	..	5	..
Lecturers . . .		2	30	1	1	..	..	..
Madhya Pradesh :	2							
Professors . . .		1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Asstt. Professors . .		1	N.A.	N.A.	N.A.	N.A.	1	..
Lecturers . . .		3+2*	33	3	5	..	11	..
Others . . .		2	26	N.A.	N.A.	N.A.	N.A.	N.A.
Madras :	3							
Professors . . .		2	51	1	10	..	..	..
Asstt. Profs. . .		3	45	2	9	..	..	..
Lecturers . . .		8	36	4	3	..	..	..
Maharashtra :	2							
Professors . . .		1	38	1	8	..	15	..
Lecturers . . .		4	39	2	8	N.A.	N.A.	N.A.
Others . . .		3	20	1	3	N.A.	N.A.	N.A.

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*Information not available.

1	2	3	4	5	6	7	8	9
Mysore :	1							
Professors . . .		1	53	..	10	..	..	..
Others		1	36	..	1	..	..	..
Orissa :	Nil.							
unjab :	There is one department for Ophthalmology & E.N.T. figures are given under XI ENT. (See below).							
Rajasthan :	1							
Professors . . .		1	N.A.	1	9	2	..	..
Asstt. Profs. . .		1	N.A.	1	6	N.A.	N.A.	N.A.
Lecturers . . .		1	N.A.	1	4	N.A.	N.A.	N.A.
Others . . .		1	28	1	3	N.A.	N.A.	N.A.
Uttar Pradesh :	3							
Professors . . .		2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Lecturers . . .		3+6*	33	2	4	..	..	..
Others . . .		2	N.A.	N.A.	N.A.	N.A.	N.A.	..
West Bengal :	1							
Professors . . .		1	65	1	26	..	..	..
Asstt. Profs. . .		1	46	1	14	..	17	..
Others . . .		7	47	(—)	13	..	..	..
Delhi :			Nil.					

XI. Ent.

1	2	3	4	5	6	7	8	9
Andhra Pradesh :	2	(1 college includes Ophthalmology Dept.,)						
Professors . . .		2	41	2	12	..	6	11
Asstt. Profs. . .		1	35	..	8	..	12	..
Lecturers . . .		3	43	2	9	..	12	5
Bihar :	Nil.							
Gujarat :	Nil.							
Kerala :	Nil.							
Madhya Pradesh :	2							
Lecturers . . .		2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Madras :	3							
Professors . . .		3	46	3	13	..	..	..
Asstt. Profs. . .		4	38	4	5	..	4	..
Maharashtra :	1	(reports only in respect of part-time working staff.)						
Lecturers . . .		2	40	2	12	N.A.	N.A.	N.A.
Mysore :	Nil							
Orissa :	Nil							
Punjab :	2	(1 college includes Ophthalmology Dept.)						
Professors . . .		2	43	2	10	..	4	8
Asstt. Profs. . .		4	40	4	9	..	4	..
Lecturers . . .		1	34	1	4	..	4	..
Others . . .		2	44	1	3	..	4	..

*Information not available.

1	2	3	4	5	6	7	8	9
Rajasthan :	Nil							
Uttar Pradesh :	1							
Lecturers . . .		2	..	..	..	..	..	..
Others . . .		1	..	..	..	N.A.	..	..
West Bengal :	1							
Professors . . .		1	60	1	26	..	..	17
Others . . .		3	48	1	17	..	15	..
Delhi :	1							
Lecturers . . .		5	32	2	9	..	7	..

XII. Paediatrics

1	2	3	4	5	6	7	8	9
Andhra Pradesh	1							
Professors . . .		1	40	1	8	..	..	10
Asstt. Professors . .		2	37	2	5	..	..	9
Lecturers . . .		5	36	3	5	..	..	6
Bihar:	Nil.							
Gujarat : . . .	Nil.							
Kerala : . . .	1							
Associate Professors .		1	34	1	4	..	5	..
Asstt. Professors . .		1	34	1	4	..	5	..
Lecturers . . .		4	32	..	2	..	3	..
Madhya Pradesh : .	1							
Asstt. Professors .		1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Lecturers . . .		1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Madras : . . .	3							
Professors . . .		2	50	2	13	N.A.	N.A.	N.A.
Lecturers . . .		15	37	3	3	N.A.	N.A.	N.A.
Maharashtra : . .	Nil.							
Mysore : . . .	Nil.							
Orissa : . . .	Nil.							
Punjab : . . .	2							
Professors . . .		1	44	1	14	..	..	28
Lecturers . . .		2	39	1	4	2	..	N.A.
Rajasthan: . . .	1							
Lecturers . . .		2	45	1	8	..	12	..
Uttar Pradesh : .	1							
Lecturers . . .		1	32	1	4	N.A.	N.A.	N.A.
West Bengal : . .	1							
Professors . . .		1	58	1	25	..	17	..
Asstt. Professors .		1	48	1	18	..	17	..
Others . . .		4	37	2	7	..	15	..

1	2	3	4	5	6	7	8	9
Delhi :	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
XIII. Biochemistry								
Andhra Pradesh :	5							
Professors		3	50	3	19	5	..	8
Lecturers		13	33	6	3	2	5	1
Others		5	26	1	3	..	7	..
Bihar :	1							
Professors		1	43	1	11	..	..	22
Lecturers		3	34	1	5	..	21	..
Gujarat :	Nil.							
Kerala :	2							
Professors		1	39	1	6	..	10	..
Asstt. Professors		2	33	2	8	..	16	..
Lecturers		5	27	2	2	..	14	..
Madhya Pradesh :	Nil.							
Madras :	3							
Professors		3	48	3	12	..	3	..
Lecturers		6	35	..	7	..	1	..
Others		16	24	3	1	N.A.	N.A.	N.A.
Maharashtra :	Nil.							
Mysore :	Nil.							
Orissa :	Nil.							
Punjab :	Nil.							
Rajasthan :	Nil.							
Uttar Pradesh :	1							
Professors		1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Lecturers		2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
West Bengal :	Nil.							
Delhi :	1							
Lecturers		3	36	3	2	10	..	34
XIV. Forensic Medicine								
Andhra Pradesh :	3							
Professors		2	46	2	14	6	2	..
Lecturers		4	40	1	1	N.A.	N.A.	N.A.
Bihar :	1							
Lecturers		1	43	..	1	..	2	..
Gujarat :	Nil			..		..		..
Kerala :	Nil			..		..		..
Madhya Pradesh :	2							
Professors		1+1*	34	..	1	6	..	8

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*Information not available.

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1	2	3	4	5	6	7	8	9
Madras :	3							
Professors		2	53	2	16	..	3	1
Lecturers		4	36	..	9	..	1	..
Maharashtra :	3	(one college reported only in respect of part time staff).						
Lecturers		7	38	1	8	N.A.	2	N.A.
Mysore :	1							
Professors		1	44	1	13	..	2	..
Lecturers		1	35	1	N.A.	N.A.	N.A.	N.A.
Orissa :		Nil.						
Punjab :	2							
Lecturers		2	37	1	N.A.	N.A.	N.A.	N.A.
Rajasthan :	1							
Lecturers		1	43	..	5	..	..	2
Uttar Pradesh:	3							
Professors		2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Lecturers		4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
West Bengal :	2							
Professors		2	54	..	11	..	..	N.A.
Asstt. Professors		2	43	..	4	..	..	N.A.
Delhi :		Nil						

NOTE.—For the Colleges in Assam, Pondicherry and Jammu and Kashmir, information is not available.

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Appendix B-60(b)

Summary of the statement relating to Average, Age Qualification, Experience and Hours of Teaching of the College Departmental Staff

I. General Averages

Staff	Age	Propn. of persons with post-graduate degree	Teaching experience (years)	Number of teaching hours per week
Professor	46	90%	13	10
Assistant Professor	40	72%	7	10
Lecturer	34	28%	5	*

*Not estimated because of defective response to this item in the proformae issued to the Colleges.

II. Age

	Department-wise Averages				Minimum of the average ages given state-wise	
	Minimum		Maximum			
	Deptt.	Average	Deptt.	Average	State and Deptt.	Average
Professor	Pharmacology	43	Opthalmology	51	Maharashtra State (Surgery)	32
Asst. Professors	Physiology	32	Do.	45	Andhra Pradesh (Pharmacology)	28
Lecturer	Pathology	26	Forensic medicine	38	Orissa (Anatomy)	25

III. Post-graduate Degree

'A'	Lowest proportion of persons with post-graduate degree		Remarks
	Department	Proportion	
Professor	Social and Preventive Medicine.	62%	Eight out of the 14 department have the proportion 90% and above.
Assistant Professor	Ditto.	38%	Ten departments have the proportion above 60%.
Lecturer	Anatomy	15%	Nine departments have the proportion in the range 25-40%. Medicine, Surgery and Obstetrics Deptts. have the comparatively higher proportion.

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'B'	Department	States having the lowest percentages of Professors and Lecturers with Post-graduate Degree
1.	Anatomy	Andhra Pradesh, Madras, Maharashtra and West Bengal.
2.	Physiology	Andhra Pradesh and Madras.
3.	Bacteriology	Andhra Pradesh.
4.	Pathology	Andhra Pradesh and West Bengal.
5.	Pharmacology	Madras and West Bengal.
6.	Social & Preventive Medicine	Andhra Pradesh and Mysore.
7.	Medicine	Andhra Pradesh, Kerala & Punjab.
8.	Surgery	Kerala, Madras and West Bengal.
9.	Obsteterics and Gynecology	Madhya Pradesh & Punjab.
10.	Opthalmology	Andhra Pradesh.

V. Teaching Experience and No. of Teaching Hours

'A'

	Teaching Experience			
	Minimum		Maximum	
	Department	(years)	Department	(Average (years)
Professor	Social & Preventive Medicine.	8	Anatomy	17
Asstt. Professor	Ditto.	4	Pathology	14
Lecturer	Bacteriology	2	Biochemistry; E.N.T.	9

'B' Department	States where the minimum average years of teaching experience for Professors and Lecturers are observed
1. Anatomy	Delhi & Gujarat.
2. Physiology	Kerala.
3. Bacteriology	Delhi.
4. Pathology	Delhi.
5. Pharmacology	Kerala & Rajasthan.
6. Social & Preventive Medicine	Kerala, Madhya Pradesh & Punjab.
7. Medicine	Gujarat & Kerala.
8. Suergery	Maharashtra & Punjab.
9. Obsteterics & Gynecology	Mysore & Uttar Pradesh.
10. Opthalmology	Maharashtra & Rajasthan

'C'

Average number of teaching hours per week of a Professor is 10 (State averages are in the range 2—15). The corresponding figure for an Assistant Professor is 10 (the range is 4 to 26 hours).

Comparatively higher number of hours of teaching occur in the Departments of Anatomy Physiology, Pharmacology, Obsteterics and Medicine.

Department	States showing minimum average number of hours of teaching for Professors and Lecturers
1. Anatomy	Madras, Mysore & Rajasthan.
2. Physiology	Gujarat, Madras & Rajasthan.
3. Pharmacology	Punjab, Rajasthan & Gujarat.
4. Obsteterics & Gynecology	Bihar, Rajasthan & Mysore.

Appendix B-61

POST-GRADUATE COURSES IN UNIVERSITIES

Number of Universities to which the proforma was addressed—38.
Number of Universities furnishing information—36.
Number of Universities not giving Post-Graduate courses—17.

Course	No. of Universities offering the course	Duration of the Course	1950		1958	
			No. admitted	No. qualified	No. admitted	No. qualified
1	2	3	4	5	6	7
1. M. Sc. (Anatomy) . . .	2	2 years	. .	. .	3	3
2. M. Sc. (Microbiology) . .	1	2 years	. .	. .	2 (for 1957-58)	. .
3. M. D. (Pathology) . . .	4	(3 years two Universities) (2 years one University)	2 (one*)	1 (one*)	7	2 (one*)
4. M. Sc. (Pathology) . . .	4	2 years	. .	. .	1 (one*)	. .
5. M. D. (Pathology) . . .	2	3 years	1 (one*)	1 (one*)	4 (one*)	2 (two*)
6. M. Sc. (Physiology) . .	5	2 years	. .	. .	3 (two*)	2 (two*)
7. M. D. (Pharmacology) . .	2	3 years (one*)	2 (one*)	2 (one*)	3 (one*)	1 (one*)
8. M. Sc. (Pharamacology) . .	4	2 years	. .	. .	3 (one*)	2 (two*)
9. Orthopaedic Surgery . .	2	2 years	. .	. .	12 (one*)	6 (one*)
10. M. Ch. (Orthopaedic) . .	1	2 years	. .	. .	. .	3
11. M. D. Br. I. (Medicine) . .	15	2 years (eight*) 3 years (four*) 2½ years (one*) ¼ to 6 months (one*)	116 (five*)	46 (four*)	347 (fourteen*)	113 (fourteen*)

12.	M. D. Br. II. (Midwifery) .	2	4 to 6 months (one*) 2 years (one*)	..	..	15	4
13.	M. Sc. (Bact.) . . .	1	2 years	..	..	1	..
14.	M. S. (Gen. Surgery) . .	10	3 years (five*) 2 years (three*) 4 to 6 months (one*) 65 (four*) one has not furnished.	65 (four*)	19 (three*)	214 (nine*)	93 (nine*)
15.	M. S. (E. N. T.) . . .	2	2 years	..	..	6 (one*)	5 (one*)
16.	M. S. (Opth.) . . .	3	2 years (one*) 3 years (one*)	.. 3 (one*)	.. 1 (one*)	.. 16	1 (1957-58) 11
17.	M. S. (Medicine) . . .	5	2 years (four*) 2½ years	1 (one*)	1 (one*)	113	27 (three*)
18.	M. O.	1	2 years	..	..	1	..
19.	M. D. Br. V. (O. & G.) . .	2	3 years (one*) 2 years (one*)	..	..	6	2
20.	M. S. Br. V. (O. & G.) . .	2	3 years (one*)	..	..	9	2
21.	M. S. Br. II. (Anatomy) . .	2	3 years (one*)	4	..	1	..
22.	Ph. D. (Bio-Chemistry) . .	1	N.F.	N.F.	N. F.	N. F.	N. F.
23.	Ph. D.	3	2 years (two*) 1 year (one*)	..	1 (one*)	6	2 (one*)
24.	M. Sc. (Med.) . . .	3	2 years	17 (one*)	..	17	6 (two*)
25.	M. D. (Forensic Med.) . .	1	N. F.	N. F.	N. F.	N. F.	N. F.
26.	M. D. (Tuberculosis) . .	1	N. F.	..	..	7	4
27.	State Medicine . . .	1	N. F.	N. F.	N. F.	N. F.	N. F.

1	2	3	4	5	6	7
28. Radiology	2	2 years	..	..	5	6
29. Ph. D. (Pharmacy)	1	2 years	N. F.	N. F.	N. F.	N. F.
30. D. G. O.	6	1 year	2 (fourteen*)	..	26 (four*)	19 (four*)
31. D. V. D.	4	1 year	5 (one*)	2 (one*)	10 (three*)	6 (two*)
32. D. O.	6	1 year	1 (one*)	4 (one*)	15 (three*)	9 (two*)
33. D. L. O.	7	1 year	2 (one*)	4 (two*)	16 (five*)	11 (five*)
34. T. D. D.	5	1 year (four*) 9 months (one*)	5 (one*)	..	7 (two*)	11 (two*)
35. D. Ped.	2	1 year (one*)	..	1	4	1
36. D. A.	5	1 year	8 (one*)	2 (one*)	51	26 (six*)
37. D. C. P.	6	1 year	..	..	37	24 (four*)
38. D. P. H.	2	2 year (one*) 1 year (one*)	3 (one*)	5 (one*)	16	12
39. D. Hy.	1	1 year	1	..	2	1
40. D. M. R. E.	3	1 year	13 (two*)	8 (two*)	17	26
41. D. P. M.	1	2 year	..	..	4	
42. Diploma in Basic Med. Sciences	1	1 year	..	..	30	6
43. D. T. M. & H.	1	9 months	61	44	61	45
44. L. T. M.	1	3 months	36	22	27	13
45. D. T. D.	4	1 year (three*) 9 months (one*)	19 (two*)	15 (two*)	27	17

46.	Social Medicine and Public Health.	1	N. F.	N. F.	N. F.	N. F.	N. F.
47.	D. Orth. S.	1	N. F.	..	—	9	5
48.	D. O. M. S.	3	1 year	..	—	12	9
49.	M. Pharmacy	1	1 year	..	—	..	2
50.	Final profession B. D. S. . .	1	N. F.	..	..	..	12
51.	Diploma in Anaesthesiology .	1	10 months	..	..	—	5
52.	D. C. H.	4	1 year	..	..	26	20
53.	M. D. (Bact)	2	2 years	..	..	3	(Figures for 1957-58).
54.	M. S. (Tharacic/Neuro surgery) .	1	2 years	..	..	5	—
	GRAND TOTAL .			357	179	1,224	578

NOTES.—1. Thirty six replies have been tabulated.

2. Number of seats available in all upgraded departments during 1960-61 is 148.

*denotes Universities.

N. F. denotes Not furnished.

Appendix B-62

THE ADAPTATION OF MEDICAL EDUCATION TO EXPENDING SCIENTIFIC KNOWLEDGE.*

Since World War II there has been a phenomenal growth in the volume of research, in the construction of research facilities, and in the traineeship programs for research personnel. Indeed, the status of research is such that our young men cannot be blamed if they believe it is now the principal avenue to academic advancement.

During these same years when medical educators have been devoting so much energy to scientific research, patterns of medical care have been changing rapidly. Health services have become increasingly complex because of the trend to more and more specialisation in medicine and the entry of disciplines, outside of, but related to medicine, into the health field. Communication between the general physician, the various medical specialists, and the other health disciplines, is often difficult.

Medical Schools are be set with problems. I propose to discuss three problems which, because of their importance and scope, call urgently for our careful attention. These are (a) the adaptation of medical education to our expanding scientific knowledge, (b) the delicate balance of research with teaching and patient care, and (c) the relation of university medical centres to medical care for the whole community.

Because the mass of medical knowledge is steadily increasing, it is generally agreed that complete coverage is beyond the capabilities of faculty and students. Educators have been forced to pay more attention to selection of curriculum content and to more efficient methods of presenting what they consider essential. To any one faculty member, abandonment of complete coverage is acceptable if it means that the time allotted to his colleagues is cut in order that he may have more for the presentation of his own subject. For students, abandonment of coverage is often a source of frustration and anxiety, because unhappy specialists keep telling them that they are not learning all they need to know but this is probably no worse for them than their uncertainty as to just which "essentials" they should select from the overwhelming mass which is presented when all their teachers, without any restraint, make their specialised demand upon them.

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*Being an extract from the Address delivered recently by Dr. Joseph T. Wearn, Consultant in Medical Affairs, Harvard Medical School & Western Reserve University, to the American Medical Association on the "immediate problems for medical educators."

Time is precious for both teacher and learner. We must recognise the importance of defining our requirements and our objectives, and of devising more adequate methods for appraisal of both teacher and student performance.

The defining of absolute essentials, especially for students in the first 2 years, is of prime import. The faculty is certainly better qualified for this selection than the students. We must recognise that either the teacher provides a definition on the basis of his knowledge and experience, or the student without experience guesses at what is essential. What one hopes for is that spoon feeding can be avoided by the wise instructor who can guide the student in the selection of the essentials on which to focus his main effort, and then can inspire him to use his own initiative and enthusiasm in pursuit of advanced knowledge in areas where the student has special interest and aptitude.

If essentials can be reasonably defined, there should be a change in the appraisal of student performance. The word "essentials" implies that the student must master 100 per cent, not 60 or 75, before he is advanced to greater responsibilities. Once the student has mastered the clearly defined essentials, opportunities should be available to encourage the more able students to develop and go as far beyond the minimum requirements as their capacities permit. It now becomes imparative that we instill into students not only the necessity, but also a real desire, to continue their learning, and it follows that, in order to accomplish this, they must have acquired sufficient scientific critique to select wisely from the ever-increasing mass of knowledge.

What we need is a clear definition of our problems, suitable methods for data collection, accurate observations, and controlled study to test the hypotheses which we formulate. In short, more research in medical education is greatly needed. The investigative road in medical education will not be a smooth one, because methods must be devised, controls are difficult, and medical faculties have long enjoyed the reputation of being resistant to change. However, the factual presentation of the results of studies in medical education will stimulate others to investigate, and eventually we may even hope for objective and constructive criticism in this field, which is not altogether common today.

There is grave doubt that growth in quantity of research is desirable unless it is possible to assure that there will be maintenance of quality, or better still, an improvement in quality of the research. The present medical schools must expand their facilities or new medical schools must be built to make the suggested increase of research possible. The task will fall squarely on the shoulders of medical schools. This immediately poses the question whether we are prepared to meet this challenge. Do we now have or can we mobilise an adequate research staff for such an increase ? Are we in a position financially to undertake this task ? And of equal import, will this additional growth of volume of research completely upset that balance of teaching, medical care, and research that is so essential in our schools today ? Before answering the staff question, one must look carefully at the distressing number of vacancies that exist in medical faculties today. As long as key teaching positions remain unfilled one must question the wisdom of attempting expansion, lest standards be sacrificed. The availability of large sums of money for research should certainly not be the sole determining factor. It is imperative that we begin immediate planning, define our responsibilities, and take steps to meet them.

We must also consider the desirable balance of teaching, medical care and research. This is frequently referred to in terms of the three-legged stool, of which all three legs are essential if the stool is to stand. We must remember that, if one leg is allowed to grow inordinately at the expense of the others, the balance is destroyed. A sound, productive research programme is a *sine qua non* for a living medical school, but its value can be questioned if its growth becomes uncontrolled at the expense of quality or at the expense of teaching and care of patients. In short, if an increase in the volume of research is to occur, then let us plan carefully for staffing for facilities, and for financing it, but at the same time control it so that its growth is reasonable in relationship to its environment.

The third problem that calls for more intensive study on the part of medical educators is that of whether we are meeting our responsibilities in educating the physician adequately for his role in health service to his community.

In the earlier days of this country practically all medical school faculty members were in the closest touch with community needs in health care, because they themselves were the leading practising physicians of the community. However, as the medical schools have allied themselves with universities and with university hospital centres, the emphasis has shifted, and full-time positions have been created which have permitted and encouraged clinical teachers to devote themselves to research at the preclinical and clinical levels. This brought new life into the schools and resulted in the great increase in medical knowledge which has made it possible for this country to have the highest standards of medical care.

As more full-time research and teaching positions became available in clinical departments, these faculty members gradually lost their intimate association with the patterns of health service in the community. There is no doubt that the practice of these full-time men is often of the highest quality and exceptional in its ability to deal with the most complex medical problems; but in so far it is dependent on the unique facilities of the great medical centre, it is isolated from practice in the community.

By evolution, therefore, academic medicine has actually become a speciality itself and competes with other areas of medicine in trying to attract young physicians to it. This is natural and desirable as long as the academic medicine specialists have, and impart to their students, an appropriate respect for the pursuit of excellence in other careers in medicine, and as long as they use with self control the enormous advantage they have because they control access to all careers in medicine, not just access to their own speciality.

What we must ask ourselves, then, is whether in pursuing our own speciality or academic medicine we are keeping in close enough touch with the fast changing patterns of health service in the community. We must consider whether medical faculties, intent upon their own research, teaching, and care of patients in university hospital centres, have become less familiar than they should be with all the other aspects of health service for which their students after graduation must eventually assume responsibility.

Inasmuch as this is an education problem in medicine, there can be no doubt that the obligation for its solution lies with medical educators.

It behoves us, therefore, to face this problem without delay, to shoulder our responsibilities, and to plan to meet them. Fortunately, we do have some evidence that research techniques can be supplied to studies of methods and patterns of medical care. Medical educators must see to it that these techniques are applied objectively and that the results are used as a basis for planning improved educational programmes.

If we keep before us the fact that, as medical educators, we teach today the physicians not of tomorrow but of the next several decades, we will see that we must plan for ahead in order to equip our graduates to meet the challenges which will result from continuous increase in medical knowledge, from changing patterns of medical care, and from unpredictable economic and social progress. We must accept our responsibilities unequivocally, define our goals and set our course. Above all, we must keep and cherish the capacity for change which has enabled medical education to adapt to vast change in its capabilities and opportunities.

Appendix B-63

12. Medical College maintained by Government:

(a) Are the staff seconded from the general cadre of medical officers and returned periodically to that cadre ?

(i) In pre-clinical departments,

(ii) In clinical departments.

(b) Or is there a separate cadre for teachers in the medical colleges maintained by Government ?

(i) In pre-clinical departments,

(ii) In clinical departments.

(c) Scale of emoluments :

(i) *For those seconded from the general cadre :*

		scale of pay	scale of allowance
Pre-clinical departments	(Part time)		
	(Full time)		
Clinical departments	(Part time)		
	(Full time)		

(ii) *For those who belong to a special cadre for teachers*

	scale of pay	scale of allowance
Pre-clinical departments		
Clinical departments		

13. Non-governmental Medical Colleges:

		Scale of emoluments
	scale of pay	scale of allowance
Pre-clinical departments		
Clinical departments		

Appendix B-63—(*Contd.*)

PAY SCALES OF TEACHING STAFF OF MEDICAL COLLEGES.

Summary

Andhra Pradesh :

There is no separate cadre for teachers in Medical Colleges maintained by the Government. In some cases transfers from teaching cadre and *vice-versa* are resorted to. There is however, mention of a special cadre for Profs. Only, if both clinical and Pre-clinical Departments.

Scales of Pay :

Assistant Prof.	200-500.	+ allowances
Clinical :	450-750.	
Pre-clinical Prof. :	600-900.	

In the case of Warangal Medical College which is a Private College the scale of pay of lecturers is given as 200-400+allowances.

Assam :

There is a separate cadre for the purpose.

Scales of Pay :

Prof. : 850-1500+200 C.A.
Assistant Prof. : 500-800+150 C.A.
Demonstrator : 225-600+125 C.A.

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Bihar :

There is no separate cadre for teachers in Medical Colleges run by Government. Only junior staff are in many cases returned from the teaching cadre to the general cadre.

Scales of Pay :

Professor : 300-15-380-25-480-EB-30-750-850 *plus* special pay 225 D.A. Rs. 100 plus compensatory allowances and special compensatory allowance.

Lecturers : 200-10-250-15-325-EB-15-400-10-450 *plus* special pay of Rs. 150 and D.A. compensatory and special compensatory allowance.

Part-time lecturers at 150 per mensum each or Rs. 16 per lecture.

Gujarat :

There is no general cadre for recruitment of the teachers in the State while there is a separate cadre maintained by the Government for the purpose.

Scales of Pay :

Prof : 1000-1400+250 N.P.A.
Lecturer & Reader : 500-800 +150 N.P.A.
Jr. Lecturer : 250-600 +150 N.P.A.

Kerala :

In the Medical College, Trivandrum the staff once appointed from the General Cadre, there is no going back and must continue in the Medical College. A separate cadre is maintained in the clinical as well pre-clinical departments by the Government. but the Medical College Calicut has however no such clause.

Scales of Pay (Govt.) :

Prof. : 800-1000

Associate Prof. 700-900+100 C. A., Asstt. Prof., 400-700 (Grade I), 350-600 (Grade II), Lecturer 350-600+75 C.A., Demonstrators and 2nd Grade Lecturers or Tutor 150-350+50 C.A.

Maharashtra :

There is a General State Service for the purpose and all the colleges follow this.

Scales of Pay :

Prof. : 1000-1400+250 N.P.A.
Lecturer & Reader 500-800+150 N.P.A.
Jr. Lecturer 250-600+150 N.P.A.

There are two Non-Governmental Medical Colleges and one Municipal College. They have not furnished any information in this respect. The scales of pay in the Municipal College are :—

Professors : 800-50-1250+150 N.P.A. and D.A.
Asstt. Prof. : 490-35-560-40-800+100 N.P.A. & D.A.
Lecturer : 280-20-400-25-475+D.A.

Madhya Pradesh :

There is no general cadre in 3 medical colleges and in the 4th *i.e.,* M.G.M. Medical College, Indore only some times if eligible for appointment. A separate cadre is maintained by the Government for the recruitment of teachers in all the 4 Medical Colleges.

Scales of Pay :

$$\left.\begin{array}{ll}\text{Professor :} & \text{850-1100}\\ \text{Asstt. Prof. :} & \text{450-970}\\ \text{Lecturer :} & \text{225}\end{array}\right\} \text{+allowances.}$$

Madras :

There is no general cadre for the 4 colleges. The 5th college *i.e.*, Tanjore Medical College, is still under construction. There is no separate cadre for teachers maintained by the Government in three colleges, while in Stainley Medical College, it exists.

Scale of pay :

Professor 700-1100+250 N.P.A.

Lecturer . . . .
Pre-clinical Asstt. Professor and Tutor } 350-700+100 N.P.A.

Pre-clinical Demonstrator 200-400.

Clinical { (Prof. 500-800.)
(Lecturer 310-480.)
(Asstt. Prof. and Tutor 200-400.)

Non-Government :

Prof. and Associate Prof. 500-800+Children allowance and free furnished quarter.

Lecturer (Med.) 350-500+Children allowance and free furnished quarter.

Lecturer (Non-Med.) 225-345+Children allowance and free furnished quarter.

Clinical Assistant 300-400+Children allowance and free furnished quarter.

Tutor 250-360+Children allowance and free furnished quarter.

Registrar and Medical Demonstrator 200-250+Children allowance and free furnished quarter.

Mysore :

There is a general cadre for the 3 Medical Colleges maintained by the Government while the 4th *i.e.*, Kasturba Medical College Manipal has not furnished any information. The Mysore Medical College, Mysore has a separate cadre. The Bangalore Medical College Bangalore has submitted its proposal to the Government while the Karnatak Medical College, Hubli has none.

Scales of Pay (Governmental) :

Prof. and Surgeon : 550-850+75/100 allowances.

Asstt. Prof. : 250-500+100 N.P.A

Lecturer : 200-540+75 N.P.A.

The scales of pay in Karnatak Medical College Hubli are as under :

Prof. : 700-1000+200 N.P.A.
Asstt. Prof. : 300-700+100 N.P.A.
Lecturer : 250-600+75 N.P.A.

Non-Government :

Prof. : 800-1000 } +H.R. Rs. 50, Rs. 60 conveyance.
Reader : 500-800 }
Lecturer and Asstt. Prof. : 450-650+Rs. 45 H.R.
Asstt. Lecturer : 350-550+15 H.R.
Tutor : 300-400+H.R. Rs. 15.
Demonstrator : 300-400+H.R. Rs. 15.

Orissa :

Reply has not been furnished by both the colleges of the State.

Punjab :

Separate cadre is maintained by the Government in the Medical Colleges of Amritsar and Patiala, while the Christian Medical College, Ludhiana has none.

Scales of Pay (Governmental):

Prof. : 800-1500+100 allowance.
Associate Prof. : 750-1450+85 allowance.
Asstt. Prof. : 250-550+150 Special pay+70 allowance.
Demonstrator : 250-550+100 Special pay *plus* Rs. 90 allowance.
Registrar : 250-550+50 Special Pay *plus* 170 allowance+10% as H.R.

Non-Governmental :

Professor : 750-1000+150 Special allowance.
Asstt. Prof. : 550-650.
Lecturer : 350-500

Uttar Pradesh :

There is no general and separate cadre maintained by the Government in 2 of the 3 colleges in the State—while in G.S.V. Medical College, Kanpur they exist.

Scales of pay :

Pre-Clinical
Prof. : 1100-1340.
Reader : 600-900.
Lecturer : 350-600+35 allowances.
Demonstrator : 200-250+35 allowances.

Clinical Prof. 900-1140.

Reader 500-800.
Lecturer 350-600 } +35 allowances.
Demonstrator 200-220. } +35 allowances.

West Bengal :

The two Governmental Colleges (i) Medical College, and N. S. Medical College, Calcutta, do not have any General Cadre. The teachers from part of West Bengal Health Services.

Scales of Pay :

Basic Grade 250-650
Selection Grade 600-1200
Spl. Selection Grade 1200-1600
} + N. P. A., Teaching allowance, House rent and D.A. etc.

Calcutta National Medical College, Calcutta.

Pre-clinical
Prof. 600/- fixed.
Asstt. Prof. 350-400 D. A. 15%
Demonstrator 150-350 D. A. 15%
Clinical Deptt.
Prof. 500/-
Cl. Prof. 300/-
B. S. Medical College, *Bankura.*

Among the remaining 3 Non-Governmental Medical Colleges, only R. G. Kar Medical College, Calcutta has a seperate cadre. The other have not given any information. The Scales of pay are different in all the three colleges.

R. G. Kar Medical College, Calcutta.
Prof. 300 fixed.
Lecturer 150-10/2-200 D. A. 15 p. m..
Demonstrator 80-7/2-150 D. A. 15 p. m..

Delhi :

There is no such procedure in the Maulana Azad Medical College and it is stated to be inapplicable to the remaining 2 Medical Colleges.

Scales of Pay (Govt.)

Prof. : 1000-50-1400+250 N.P.A. (Non-Practicing Allowance).
Reader : 500-30-800+150 N.P.A.
Lecturer : 450-10-550+100 N.P.A.

Non-Government:

Demonstrator & Registrar 250-15-340-20-400+100/50 for P. G. Degree & P. G. Diploma respectively+70 cc Acte.	Prof. 1300-60-1600-100-1800+400 N.P.A. Associate Prof. 800-400-1000-50-1200/1300+300 N.P.A.+100 cc Acte. Assistant Prof. 500-25-650-30-800+200 N.P.A.+70 cc Acte.

Pondicherry:

There is a separate cadre for the purpose.

Scale of pay (Governmental):

Professors : 1000-50-1400+250 N.P.A.
Readers : 500-30-800+150 N.P.A.
Lecturer : 450-10-550+25% of pay N.P.A.
Demonstrator and Registrar : 250-10-350+25% of pay N.P.A.

Jammu & Kashmir:

There are no such Provisions.

Scales of pay (Govt.):

Pre-clinical Department. (Prof.) : 1000-50-1500+200 N.P.A.

Rajasthan:

There is a separate cadre.

Scales of Pay:

Prof. : 1000-50-1400.
Reader : 500-30-800-50-1000+40 D.A.
Lecturer : 400-25-750+Rs. 35 D.A.
Demonstrator : 250-25-600+Rs. 35 D.A.
(Sr.)

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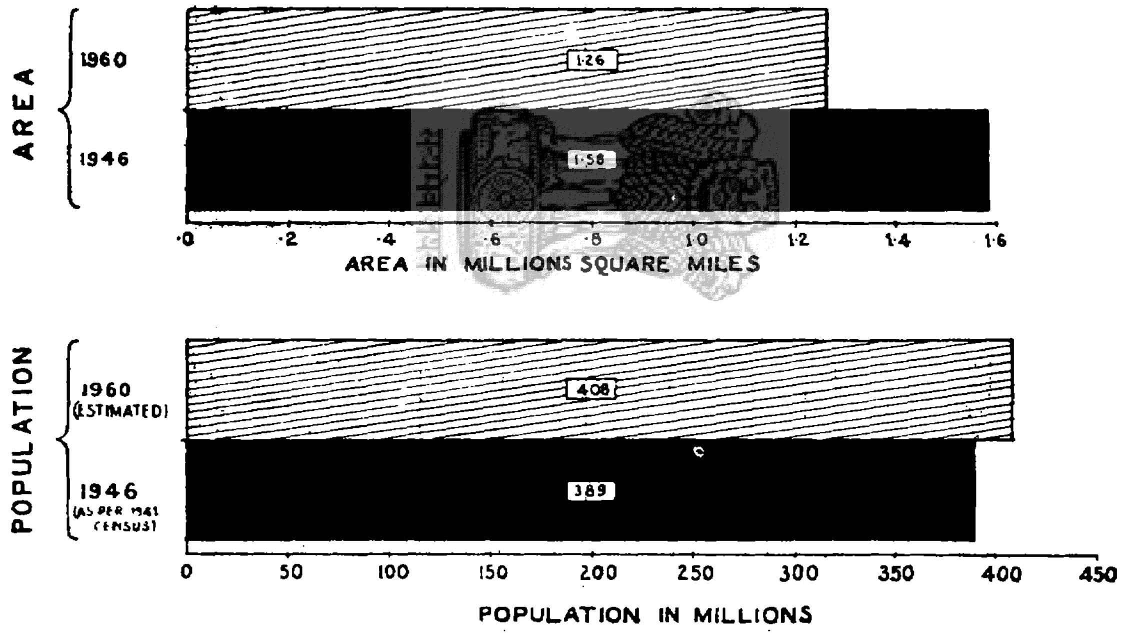
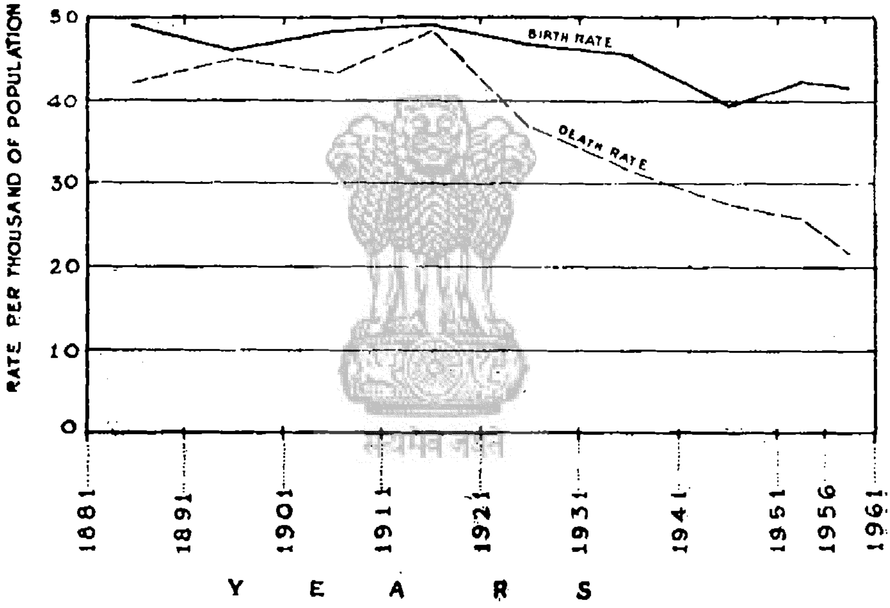
Appendix C

CHARTS AND MAPS

CHART SHOWING AREA AND POPULATION COVERED BY THE BHORE COMMITTEE (1946) AND THE HEALTH SURVEY AND PLANNING COMMITTEE (1960)

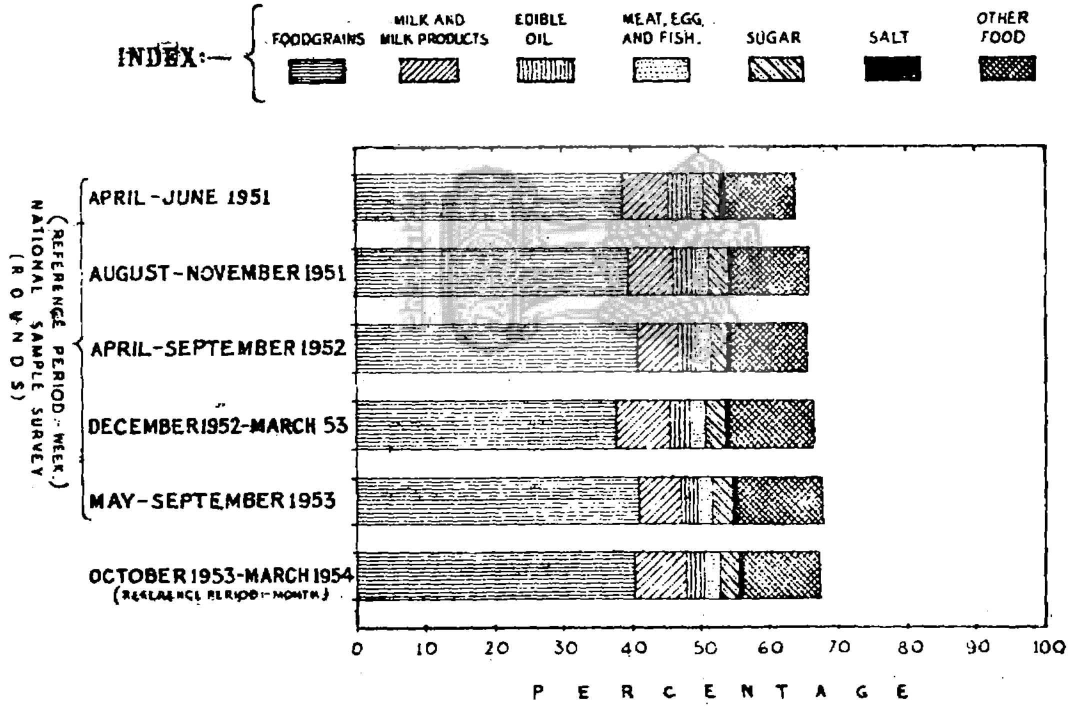


ESTIMATED BIRTH AND DEATH RATE
IN INDIA 1881-1961

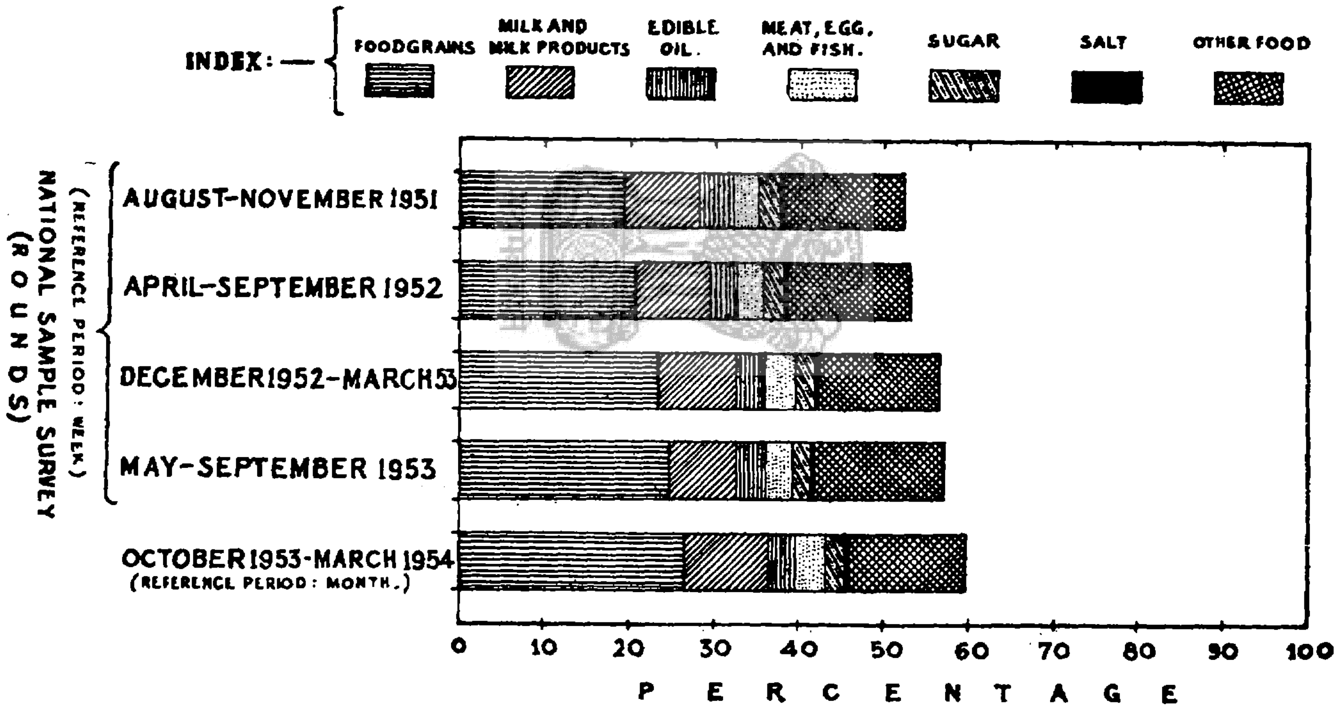


SOURCE :- OFFICE OF THE REGISTRAR GENERAL, INDIA (FOR 1881-1951)
PLANNING COMMISSION (PROJECTION FOR 1956-1961)

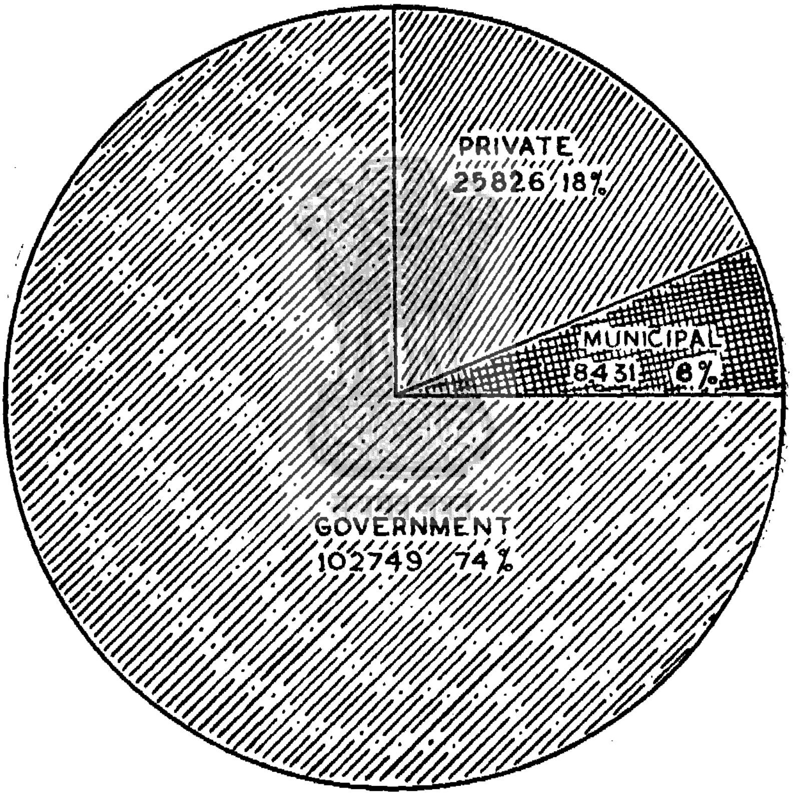
CONSUMER EXPENDITURE AS PERCENTAGE TO TOTAL CONSUMER EXPENDITURE BY ITEMS OF CONSUMPTION IN RURAL AREAS



CONSUMER EXPENDITURE AS PERCENTAGE TO TOTAL CONSUMER EXPENDITURE BY ITEMS OF CONSUMPTION IN URBAN AREAS

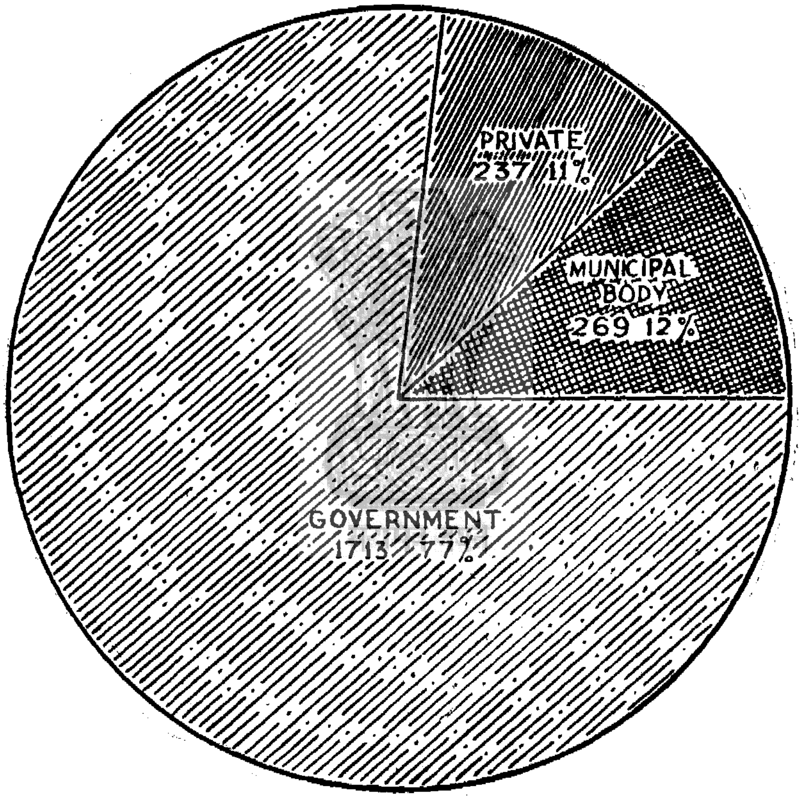


HOSPITALS



BEDS BY OWNERSHIP 1957
TOTAL BEDS..137006

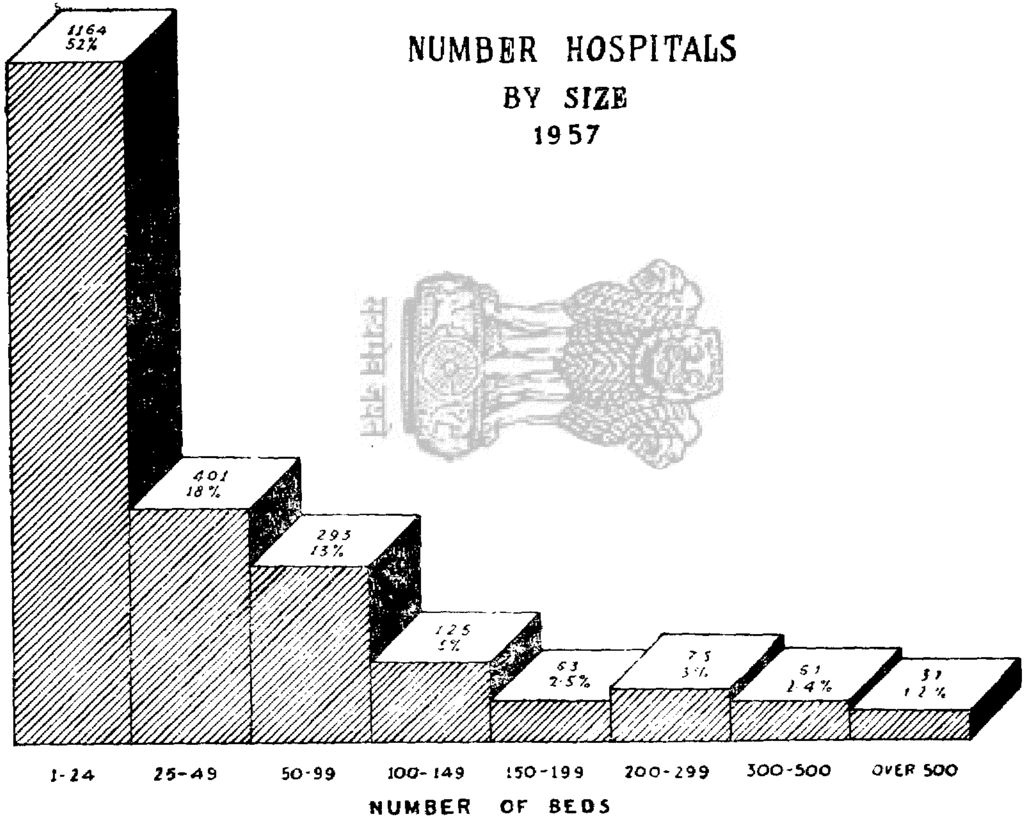
HOSPITALS

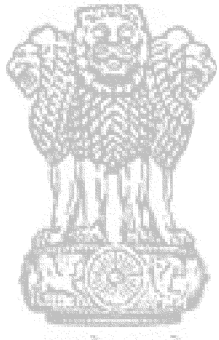


NUMBER BY OWNERSHIP 1957
TOTAL HOSPITALS 2219.

HOSPITALS

NUMBER HOSPITALS BY SIZE 1957





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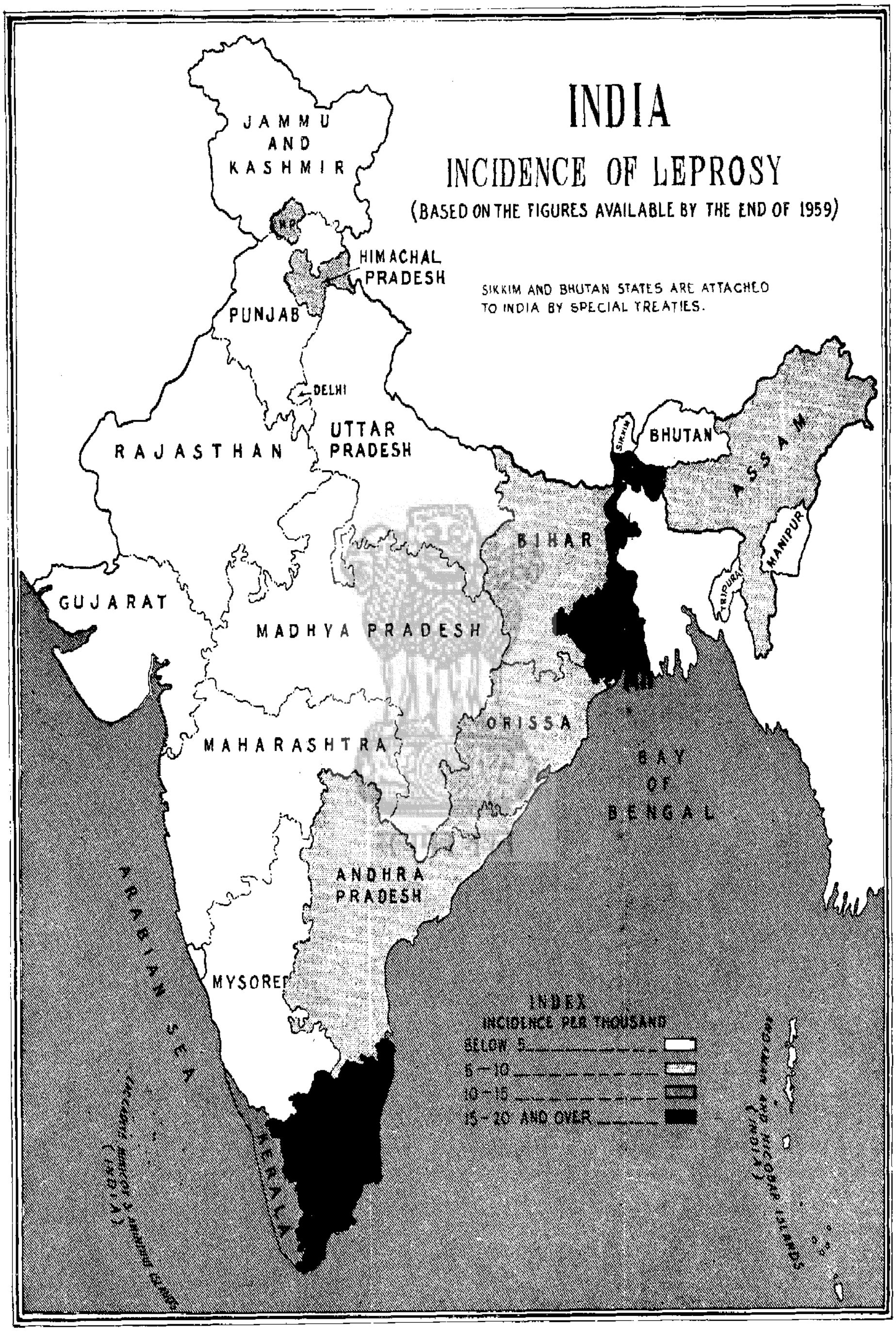
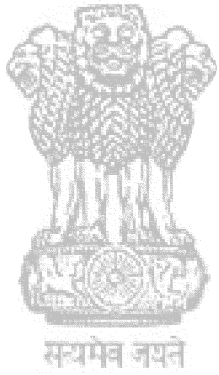


INDIA

INCIDENCE OF LEPROSY

(BASED ON THE FIGURES AVAILABLE BY THE END OF 1959)

SIKKIM AND BHUTAN STATES ARE ATTACHED TO INDIA BY SPECIAL TREATIES.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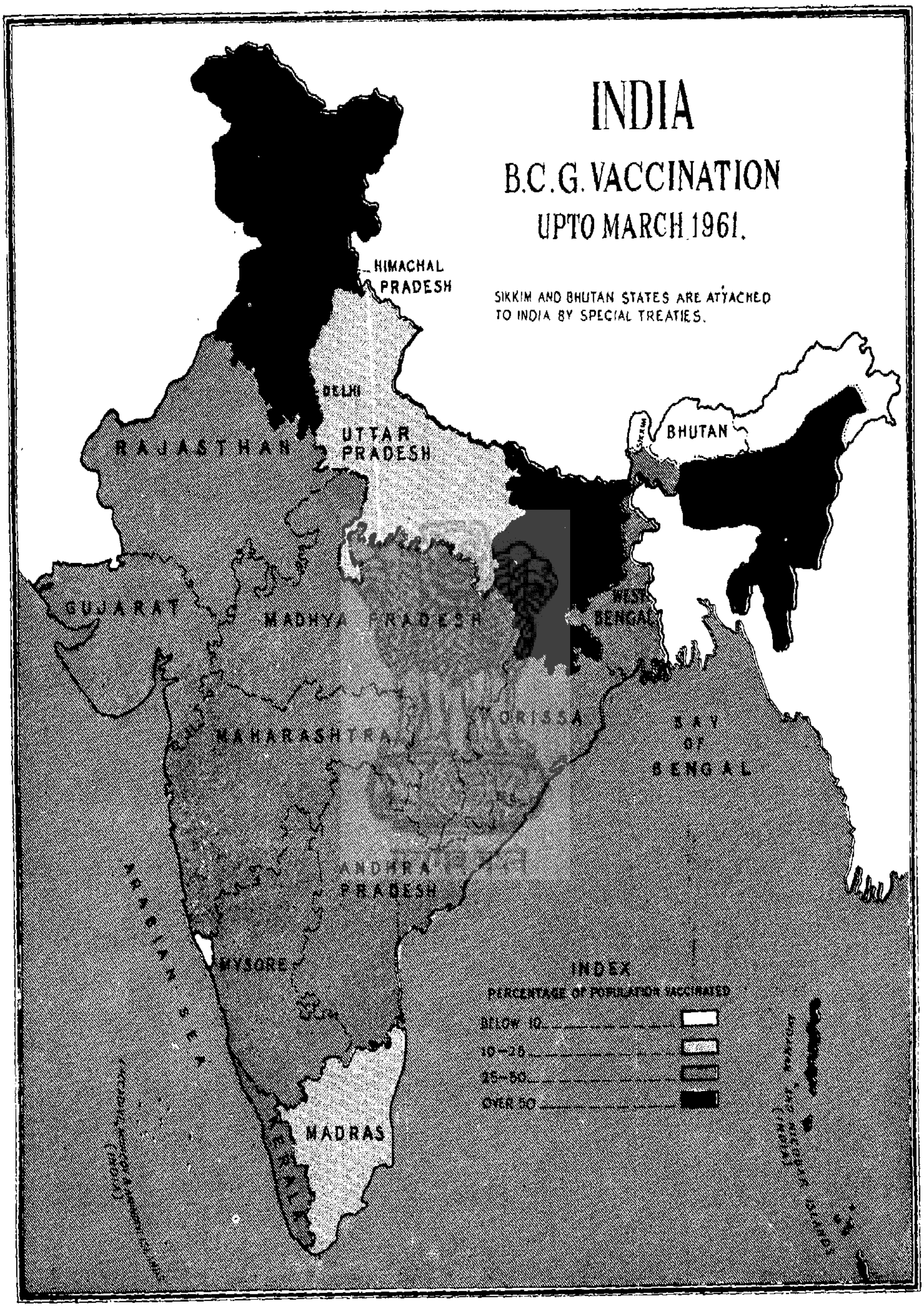
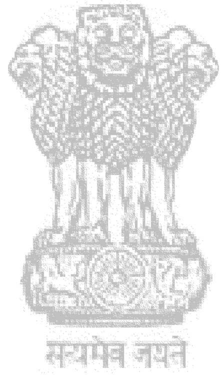
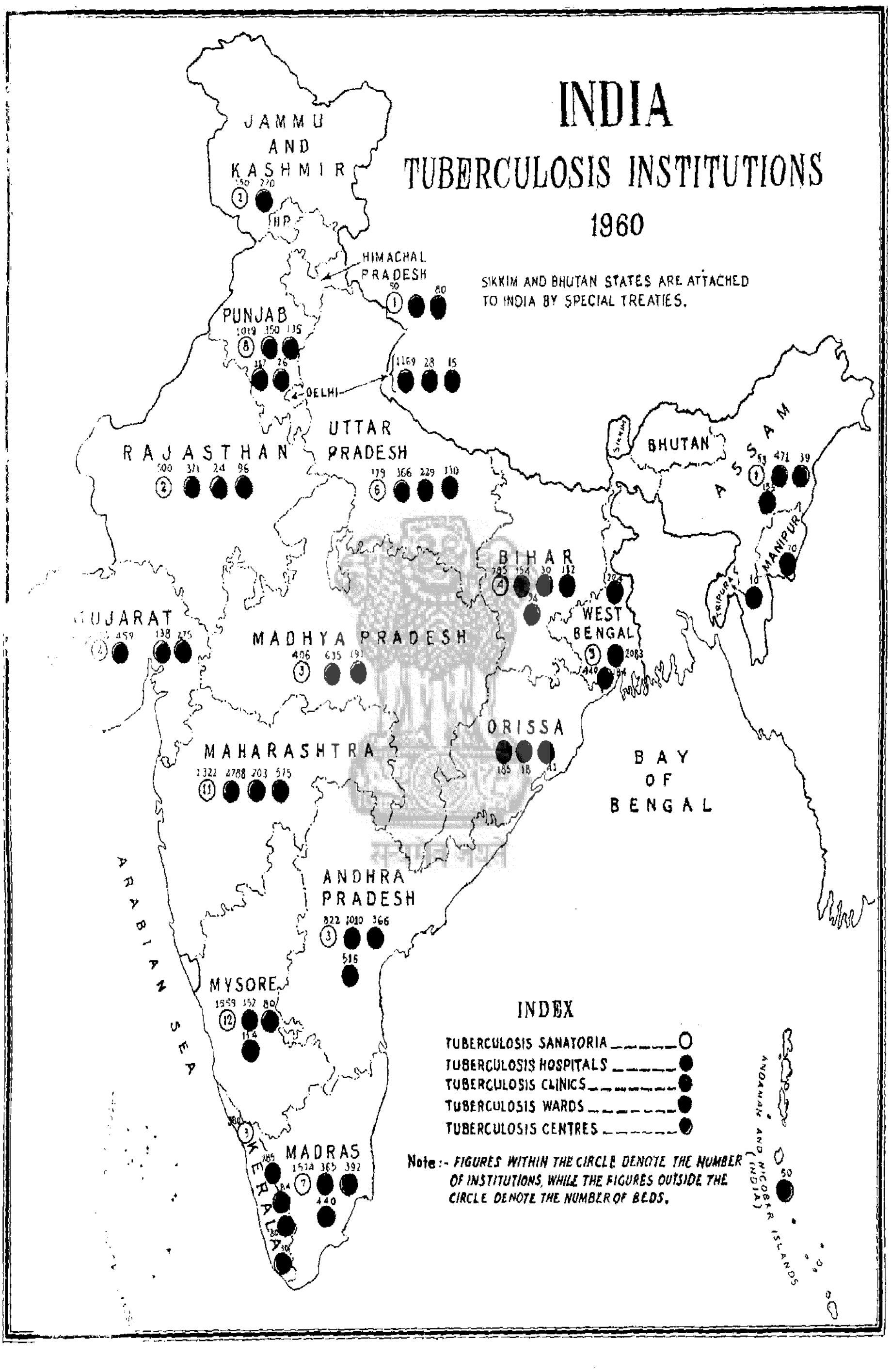

INDIA
B.C.G. VACCINATION
UPTO MARCH 1961.
SIKKIM AND BHUTAN STATES ARE ATTACHED TO INDIA BY SPECIAL TREATIES.
HIMACHAL PRADESH
DELHI
RAJASTHAN
UTTAR PRADESH
SIKKIM
BHUTAN
GUJARAT
MADHYA PRADESH
WEST BENGAL
MAHARASHTRA
ORISSA
BAY OF BENGAL
ANDHRA PRADESH
ARABIAN SEA
MYSORE
KERALA
MADRAS
INDEX
PERCENTAGE OF POPULATION VACCINATED
BELOW 10 ☐
10—25 ▨
25—50 ▩
OVER 50 ■
ANDAMAN AND NICOBAR ISLANDS


सत्यमेव जयते



INDIA

TUBERCULOSIS INSTITUTIONS

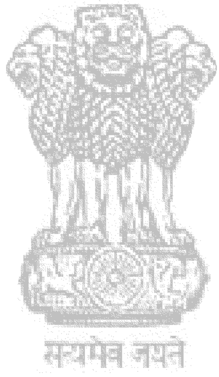
1960

SIKKIM AND BHUTAN STATES ARE ATTACHED TO INDIA BY SPECIAL TREATIES.

INDEX

- TUBERCULOSIS SANATORIA ○
- TUBERCULOSIS HOSPITALS ●
- TUBERCULOSIS CLINICS ●
- TUBERCULOSIS WARDS ●
- TUBERCULOSIS CENTRES ●

Note :- *FIGURES WITHIN THE CIRCLE DENOTE THE NUMBER OF INSTITUTIONS, WHILE THE FIGURES OUTSIDE THE CIRCLE DENOTE THE NUMBER OF BEDS.*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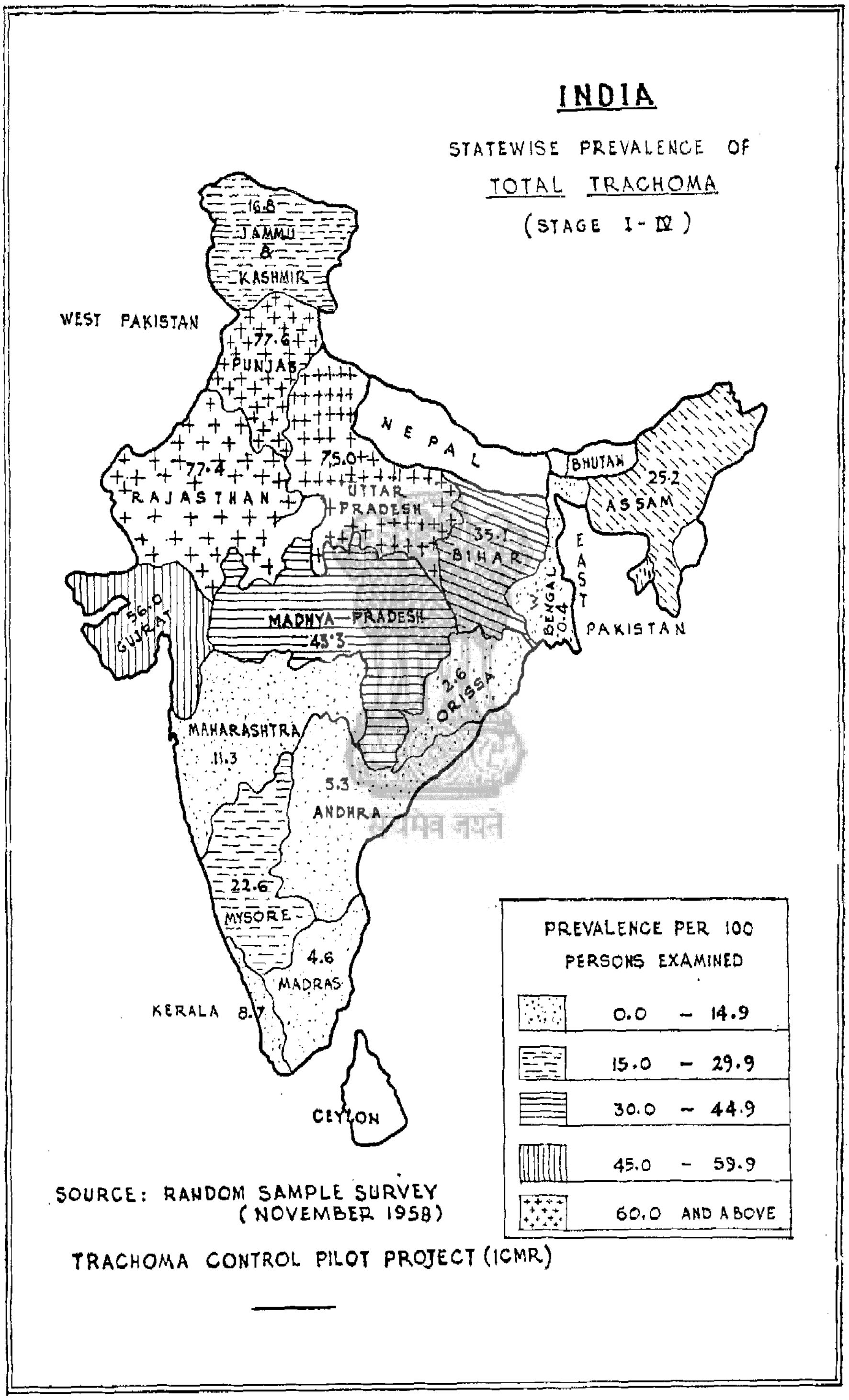


INDIA

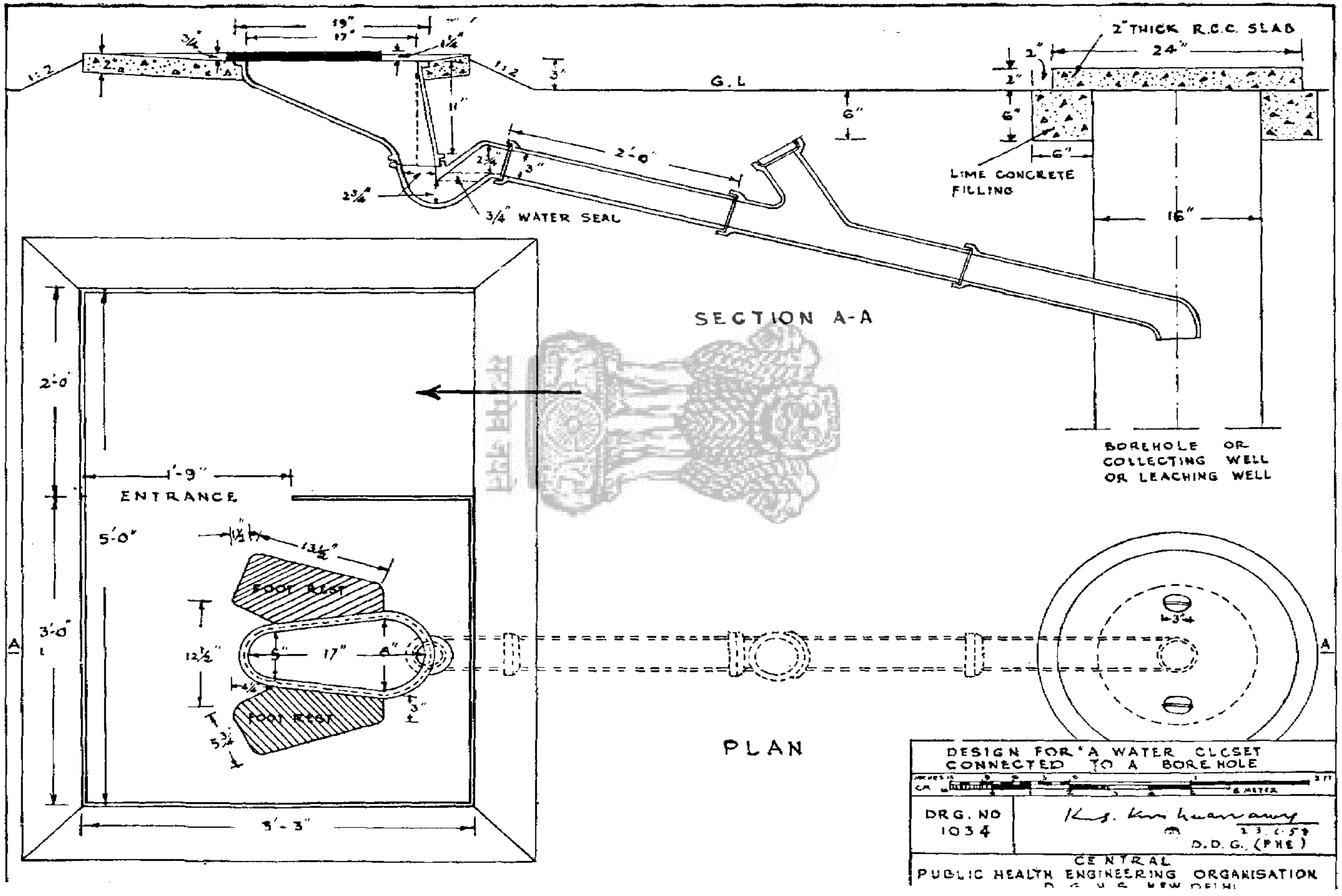
STATEWISE PREVALENCE OF TOTAL TRACHOMA (STAGE I-IV)

PREVALENCE PER 100 PERSONS EXAMINED

░	0.0 – 14.9
☰	15.0 – 29.9
▤	30.0 – 44.9
▥	45.0 – 59.9
✚	60.0 AND ABOVE

SOURCE: RANDOM SAMPLE SURVEY (NOVEMBER 1958)

TRACHOMA CONTROL PILOT PROJECT (ICMR)

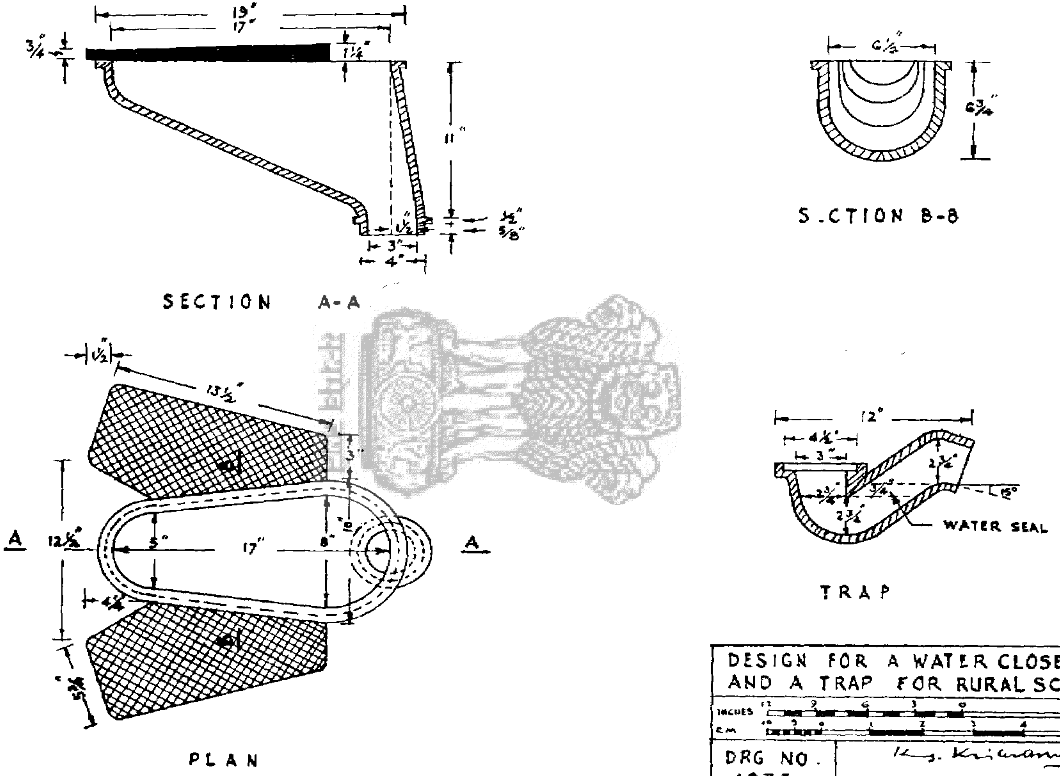


DESIGN FOR A WATER CLOSET
CONNECTED TO A BOREHOLE

DRG. NO
1034

K. S. Krishnaswamy
23.6.58
D. D. G. (PHE)

CENTRAL
PUBLIC HEALTH ENGINEERING ORGANISATION
D. G. H. S. NEW DELHI



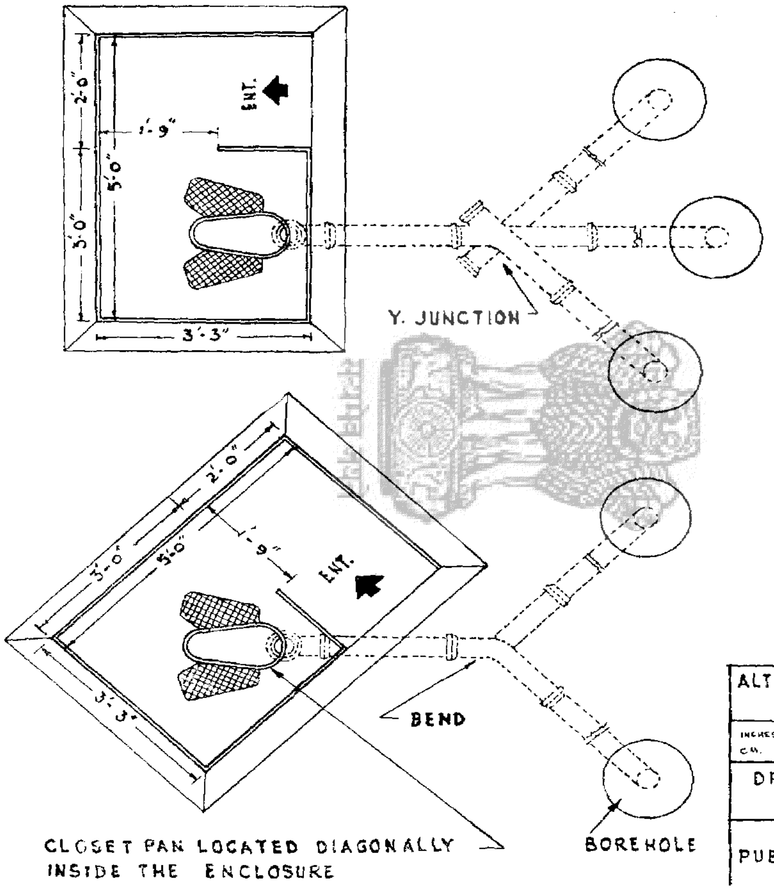
DESIGN FOR A WATER CLOSET PAN AND A TRAP FOR RURAL SCHEMES

DRG NO. 1033

K. S. Krishnaswamy

D.D.G. (PHE)

CENTRAL
PUBLIC HEALTH ENGINEERING ORGANISATION
D.G.H.S. NEW DELHI.



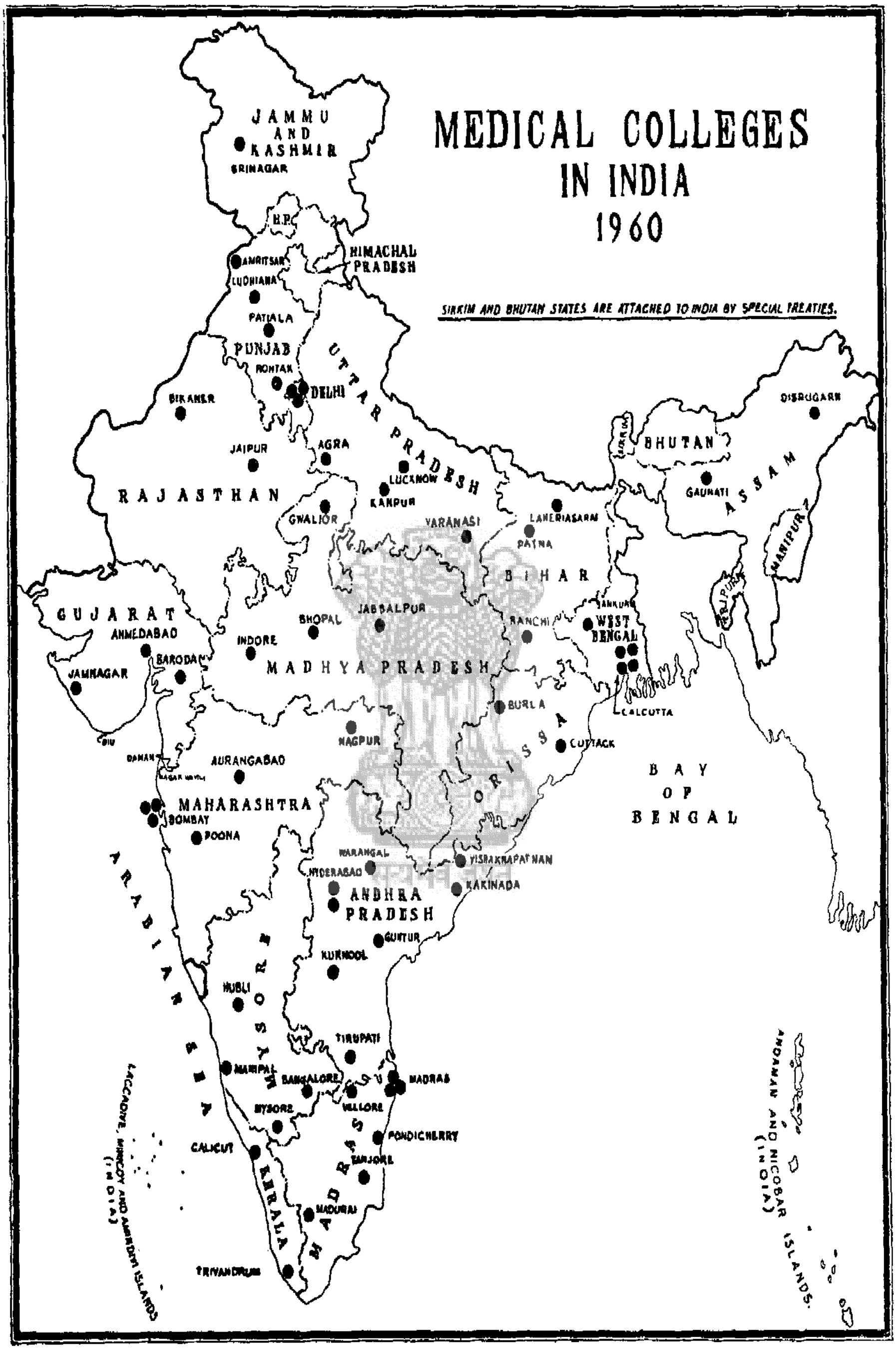
ALTERNATE DESIGNS OF A WATER CLOSET CONNECTED TO A BOREHOLE

INCHES / FEET
CM. / METER

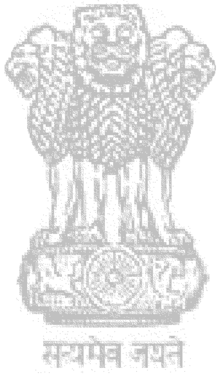
DRG. NO. 1035

D.D.G. (P.H.E.)

CENTRAL
PUBLIC HEALTH ENGINEERING ORGANISATION
D.G.H.S. NEW DELHI



281—2 M Health./62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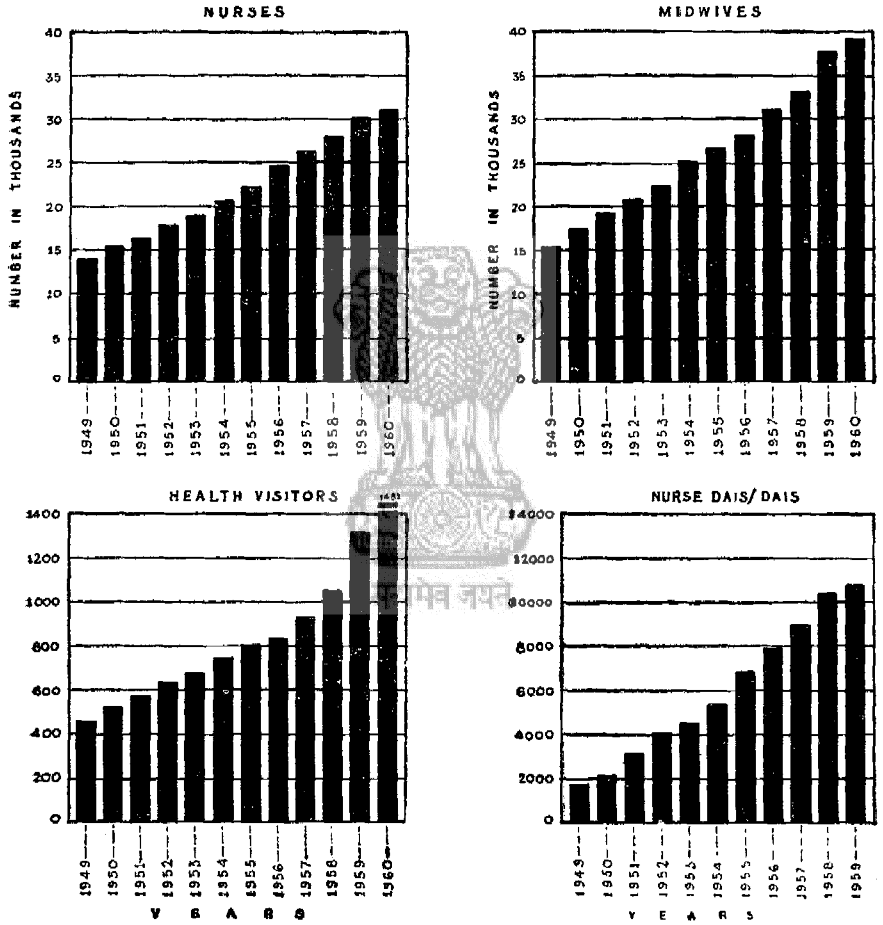
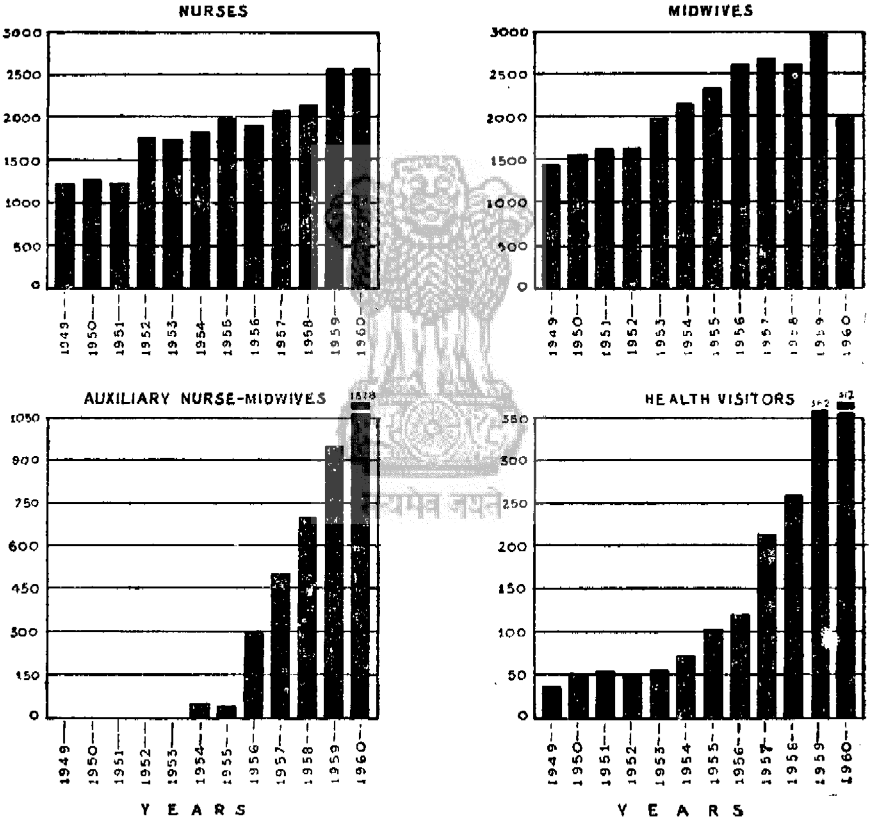
NUMBER OF REGISTERED NURSING PERSONNEL.



NUMBER OF NURSING PERSONNEL

QUALIFIED IN EACH YEAR FROM 1949-60



Appendix 'D'

COPIES OF QUESTIONNAIRE ISSUED BY THE COMMITTEE

Subject	To whom sent	Number	
		Addressed	Replies Received
1. Medical Relief (Urban and Rural).	States and Administrations .	21	15
2. Expenditure on Health . .	States	15	11
3. *(a) Medical and Health Facilities in Plantations.	Plantation Association and Chief Inspectors of Plantations.	26	22
(b) Medical Facilities in Public Projects & Coal Mines.	Project Administrations . .	10	10
(c) Medical and Public Health Facilities in Factories.	States and Administrations .	21	20
(d) Provisions Regarding Disposal of Factory Effluents.	States and Administrations .	21	20
(e) All-India Health Legislation .	Medical and Professional Councils, ESI Corporation, Ministry of Health.	64	28
4. Medical Education and Research :			
(a) Details of Functioning of Medical Colleges.	Principals of Medical Colleges .	55	54
(b) Post-graduate Courses . .	Universities	38	36
(c) Medical Research Institutions .	Administrative Medical Officers	21	18
5. Drugs :			
(a) Modern Medicine, Pharmacies, etc.	(i) Pharmaceutical Industry .	267	175
	(ii) Medical and Pharmaceutical Profession.	117	97
	(iii) Pharmaceutical Associations, Drugs Controllers and Directors of Health Services.	34	21
(b) Production of Hospital Appliances, Instruments, etc.	Manufacturing Firms . .	106	78
6. Medical Colleges and Indigenous Medicine and Homoeopathy.	Principals of the Colleges .	91	66
	TOTAL .	907	671

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*Items of information sought through letters are reproduced.

Appendix D-1(a)

PROFORMA FOR THE COLLECTION OF INFORMATION REGARDING MEDICAL RELIEF

(Sub-Committee II)

A. Urban (that is hospitals at the State, Divisional, District, Subdivisional or Taluk headquarters)

1. No. of Hospitals

	1953	1958
(a) (i) *Teaching.*—Government		
Local Authorities		
Missions		
Others		

NOTE.—Give the name and location of each teaching hospital.

	1953	1958
(ii) *Specialised.*—Government		
Local Authority		
Missions		
Others		

NOTE.—(i) A specialised hospital is one which admits only cases of a particular disease; infectious diseases hospitals are to be included as specialised hospitals.

(ii) Give the name and location of each specialised hospital.

	1953	1958
(iii) General (other than teaching) :		
Government		
Local Authority		
Missions		
Others		

(b) *Distribution of all hospitals under*—

(i) At Divisional Headquarters . . . . . . No.————

(ii) At District Headquarters . . . . . . No.————

(iii) At Sub-divisional & Taluk Headquarters . . . . No.————

2. No. of beds in :

	1953			1958		
	Male	Female	Children	Male	Female	Children
(a) (i) Teaching hospitals						
(ii) Special hospitals						
(iii) General Hospitals (other than teaching)						
(b) Total No. of beds in the State (in all categories of hospitals)						
1. Tuberculosis						
2. Leprosy						

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3. Mental Diseases
4. Infectious diseases
5. Maternity
6. Pediatrics
7. Medical
8. Surgical
9. Orthapaodics
10. Cancer
11. Unspecified

(*c*) Total No. of clinical post-mortems done in all teaching hospitals. Give the ratio of No. of post-mortems to total deaths in such hospitals.

3. Total expenditure incurred on urban hospitals :

(i) *State Institutions :*

(*a*) Salaries . . . (i) Teaching
(ii) Specialised
(iii) General (other than teaching)

(*b*) Drugs . . . . (i) Teaching
(ii) Specialised
(iii) General (other than teaching)

(*c*) Diet . . . . (i) Teaching
(ii) Specialised
(iii) General (other than teaching)

(*d*) Other items . . . (i) Teaching
(ii) Specialised
(iii) General (other than teaching)

ii) *Local Bodies Institutions :*

1953 1958

(*a*) Salaries . . . (i) Teaching
(ii) Specialised
(iii) General (other than teaching)

b) Drugs . . . . (i) Teaching
(ii) Specialised
(iii) General (other than teaching)

(*c*) Diet . . . . (i) Teaching
(ii) Specialised
(iii) General (other than teaching)

(*d*) Other items . . . (i) Teaching
(ii) Specialised
(iii) General (other than teaching)

(iii) *State aided, missionary and other hospital :*		1953	1958
(*a*) Salaries	(i) Teaching		
	(ii) Specialised		
	(iii) General (other than teaching)		
(*b*) Drugs	(i) Teaching		
	(ii) Specialised		
	(iii) General (other than teaching)		
(*c*) Diet	(i) Teaching		
	(ii) Specialised		
	(iii) General (other than teaching)		
(*d*) Other items	(i) Teaching		
	(ii) Specialised		
	(iii) General (other than teaching)		

4. (*a*) State Institutions : Personnel employed :

Categories		Teaching Hospitals	Specialised Hospitals	General Hospitals
Specialists :				
(i) Part-time	No.			
(ii) Full-time salaried	No.			
Doctors :				
(i) Part-time	No.			
(ii) Full time salaried	No.			
Nurses	No.			
Pharmacists	No.			
Laboratory technicians	No.			
Radiographers	No.			
Physiotherapists	No.			
Dietitians	No.			

(*b*) Local Body Institutions :

Categories		Teaching Hospitals	Specialised Hospitals	General Hospitals
Specialists :				
(i) Part-time	No.			
(ii) Full-time salaried	No.			
Doctors :				
(i) Part-time	No.			
(ii) Full-time salaried	No.			

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Nurses . . . . No.

Pharmacists . . . . No.

Laboratory technicians . . . . . No.

Radiographers . . . . No.

Physiotherapists . . . . No.

Dietitians . . . . No.

(*c*) State-aided, missionary & other hospitals :

Categories		Teaching Hospitals	Specialised Hospitals	General Hospitals
Specialists :				
(i) Part-time	No.			
(*ii*) Full-time salaried	No.			
Doctors :				
(i) Part-time	No.			
(ii) Full-time salaried	No.			
Nurses	No.			
Pharmacists	No.			
Laboratory technicians	No.			
Radiographers	No.			
Physiotherapists	No.			
Dietitians	No.			

5. Is the hospital staff provided residential accommodation in or near the hospital premises ? If so state—

(*a*) categories of staff so accommodated

(*b*) Proportion of hospital staff provided accommodation.

(*c*) Whether rent is charged or accommodation is given rent free.

6. (i) Give the number of general hospitals, excluding teaching hospitals, where minimum facilities for each of the following services are available :

(1) Major Surgery . . . . No.
(2) Radiology . . . . No.
(3) Laboratory Services . . . . . . No.
(4) Anaesthesia . . . . No.
(5) Dental Services . . . . No.
(6) Eye . . . . No.
(7) Ear, nose & throat . . . . . . No.
(8) Obstetrics & Gynaecology . . . . . No.
(9) Blood transfusion . . . . No.
(10) Ambulance Service . . . . . . No.

NOTE.—Minimum facilities should include :

(*a*) medical officers trained qualified in the speciality, along with the necessary ancillary staff.

(*b*) plant and equipment required for carrying out routine procedures

(ii) Are the laboratory and X-Ray services available to private practitioners also ? If so give the conditions under which their services are provided ?

7. (*a*) How many hospitals :

(i) at Distt. Headquarters;

(ii) at Sub-divisional Headquarters;

(iii) at Taluq/tehsil Headquarters are still maintained by Municipalities or other local authorities ? Have there been difficulties in their proper maintenance ? How many of these have been provincialised in the last 5 years and is it proposed to provincialise the remaining ?

(*b*) How far are the district, sub-divisional and taluq-hospitals serving as referral centres for peripheral units and what steps are being taken to facilitie/encourage this form of service ?

8. Is any action being taken to give supervisory professional duties to medical, surgical and other specialists at the district and sub-divisional levels in respect of hospitals/dispensaries at lower levels ?

9. Are any difficulties experienced in staffing district and sub-divisional hospitals with medical officers, nurses and ancillary personnel under. categories listed in item (6) above ? If so, state whether these difficulties are due to :

(*a*) lack of suitably qualified personnel,

(*b*) inadequate emolument, or

(*c*) other causes,

(*d*) if due to 'other causes' state what are the more important among these causes,

(*e*) Describe the steps, if any, taken to attract for train the required personnel.

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10. Indicate the measures taken to decentralise specialist services so as to remove overcrowding and congestion in teaching hospitals or other large hospitals at State Headquarters.

11. (*a*) To what extent is use being made of private practitioners or retired specialists as honorary or part-time medical officers for (i) general duties or (ii) for service as specialists in urban hospitals at different levels, *e.g.* State, Divisional District and Sub-divisional or Taluk Headquarters ?

(*b*) What is the approximate proportion of part-time to full-time medical officers in the Departments of Medicine, Surgery, Obstetrics and Gynaecology, Eye, E.N.T., Laboratory Service and Radiology, Dentistry, employed in institutions at different levels shown under (*a*) above ?

(*c*) Are private practitioners, without being attached to hospitals, allowed/encouraged to refer cases to hospitals for advice/investigation ?

1953 1958

12. (*a*) Total number of all types of urban dispensaries.

(*b*) Are some of these dispensaries provided with a small number of beds; if so number of dispensaries with beds.

(*c*) How many of these are in improvised or rented buildings ?

(*d*) State the range in the number of beds in these dispensaries.

(*e*) Give the number of dispensaries/clinics for :

(1) T.B.
(2) Leprosy
(3) M.C.H.
(4) Dentistry
(5) Eye

NOTE.—The total number of dispensaries under (a) above should not include those under (*d*).

13. Give the average annual budget for a State dispensary under separate heads such as :

1953 1958

(*a*) Staff, (i) Medical, and
(ii) Other

(*b*) drugs

(*c*) diet charges, if any, and

(*d*) other expenditure

NOTE.—The information indicated above is to be given separately as the average budget or: —

(1) a dispensary with beds; and

(2) a dispensary without beds

(3) a clinic/centre as defined in 12(*d*)

14. (*a*) Do any of the dispensaries mentioned under 12(*a*) participate in public health work ?

(*b*) Describe briefly the types of public health *e.g.* activities undertaken by these dispensaries, school health, health education, family planning, environmental sanitation, immunisation etc.

(*c*) How far has the programme of combining curative and preventive health functions in an urban dispensary been satisfactory from the point of view of its working (a) as a treatment centre and (b) as the focus from which preventive health work radiates into the area served by it.

NOTE.—Specific instances, if any, may be quoted in order to demonstrate the efficacy of the system or its shortcomings.

15. (*a*) Is there any evidence of the emergency, in any part of your State of voluntary health insurance clubs, societies, etc. under the sponsorship of individuals, medical associations or other bodies ?

(*b*) If so, give details.

16. What the average cost per bed in the case of hospitals (excluding teaching hospitals).

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(*a*) *General hospitals :*

	Distt. Hd. qr. Hospitals	Sub-div. Hospitals	Head Qrs. & Taluq Hospitals	Rural Hospitals
Constructions				
Maintenance				

(*b*) *Specialised hospitals :*

	T.B. Hospitals	Mental Hospitals	I.D. Hospitals	Maternity Hospitals
Constructions				
Maintenance				

(*c*) *Does the construction cost given above include :*

(i) Laboratory and X-ray Services . . . . . . Yes/No.

(ii) Out Patient Department . . . . . . Yes/No.

(iii) Staff Quarters . . . . Yes/No.

17. What steps, if any, have been taken to work out plans for lowering the cost of construction of hospitals/dispensaries ?

18. (*a*) No. of hospitals providing medical relief through :

	1953	1958
(i) Ayurvedic System		
(ii) Unani System		
(iii) Homoeopathy		
(iv) Other systems		

(*b*) No. of beds in (i), (ii), (iii) & (iv) above

	1953	1958
(i) Ayurvedic		
(ii) Unani		
(iii) Homoeopathy		
(iv) Other systems		

(*c*) Average cost per bed

	1953	1958
(i) Ayurvedic System		
(ii) Unani		
(iii) Homoeopathy		
(iv) Other		

(*d*) No. of hospitals under (*a*) above used for teaching purposes

(*e*) Are full clinical records of cases treated, maintained and are any reports published?

19. No. of dispensaries providing medical relief through:—

	1953	1958
(i) Ayurvedic		
(ii) Unani		
(iii) Homoeopathy		
(iv) Other		

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20. (i) Please indicate the No. of institutions maintained by :
    - (*a*) Government
    - (*b*) Local Bodies and
    - (*c*) Other agencies in respect of those listed under 18 and 19 above separately for hospitals and dispensaries.

(ii) No. of physicians of different systems working in these dispensaries.

21. Approximate total annual expenditure on service under 18 and 19 above.

NOTE.—Please state whether the amount mentioned in reply to Q. No. 21, above, is or not included in the information given in reply to Questions 3 & 4 (*b*).

B. Rural

1953 1958

22. (*a*) Total number of rural hospitals
    - (*b*) Total number of Secondary Health Centres
    - (*c*) Total number of rural dispensaries
    - (*d*) Total number of Primary Health Centres
    - (*e*) Total number of rural hospitals devoted to special diseases such as tuberculosis, leprosy, etc.
    - (*f*) Number of rural dispensaries/centres devoted to special diseases such as tuberculosis, leprosy, etc.
    - (*g*) M. C. H. Centres
    - (*h*) Family Planning Clinics.

23. Give the No. of :
    - (i) C. D./N. E. S. Blocks already existing in the State,
    - (ii) N. E. S. Blocks remaining to be set up in the State to cover the whole area,
    - (iii) No. of P. H. C.'s functioning at present,
    - (iv) No. of subsidiary health centres functioning at present,
    - (v) How many of (iii) & (iv) are included in information given under Q. 22.

24. (i) State the staffing pattern in :
    - (*a*) Secondary Health Centres
    - (*b*) Public Health Centres
    - (*c*) Subsidiary Health Centre

(ii) Give the cost of construction & Floor area of the Primary Health Centres. Also state the No. of staff provided residential accommodation and the construction cost of staff quarters.

25. Give the average annual budget under separate heads such as:

1953 1958

- (*a*) Staff, (i) Medical & (ii) others
- (*b*) Drugs
- (*c*) Diet charges, if any, and
- (*d*) Other expenditure

NOTE.—The information indicated above is to be given seperately for (i) (1) the P.H.C. and (ii) Subsidiary Health Centre.

26. Out of the total number of hospitals/dispensaries in the rural areas, how many are run by :
    (*a*) the Government
    (*b*) local authorities
    (*c*) other organisations or bodies?

27. Are the rural dispensaries under the control of:
    (*a*) the Civil Surgeon
    (*b*) Distt. Medical Officer of Health
    (*c*) Distt. Medical and Heath Officer?

28. How many of the rural hospitals/dispensaries have been provincialised in the last five years and how many are proposed to be provincialized in future?

29. How provincialization been inexcapable in implementing the Primary Health Centre Programme? If Primary Health Centres set up at rural dispensaries without provincializing them, what has been the position after completion of the intensive development phase?

30. Have any secondary health units been set up, if so how many and with what results?

31. (*a*) Are there rural dispensaries other than P. H. C. s participating in public health work?

(*b*) Describe briefly the types of public health activity undertaken by these dispensaries.

(*c*) How far has the programme of combining curative and preventive health functions in a rural dispensary been satisfactory from the point of view of its working (*a*) as a treatment centre and (*b*) as the focus from which preventive health work radiates into the area served by it.

NOTE.—Specific instances, if any, may be quoted in order to demonstrate the efficacy of the system or its shortcomings.

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32. Give the number of rural hospitals and rural dispensaries which are providing medical relief through:	1953	1958
(*a*) the system of modern medicine		
(*b*) (i) the Ayurvedic system,		
(ii) Unani,		
(iii) Homoeopathy, and		
(iv) Other systems.		

33. Give separately the average annual budget, under the heads (*a*) to (*d*) shown in item 25, in respect of a typical rural hospital and rural dispensary providing medical care through each of the systems mentioned in item 18(*a*) (i) to (iv).

34. Are the medicines used in Ayurvedic Hospitals & dispensaries purchased in the market or prepared by the institutions to themselves? In the former case are reliable & standard preparations available?

C. Organisation, Administration & Service Conditions

1. What is the structure of the administrative organisation, in the field of Health in your State from the highest to the lowest level? If integration of medical & public health activities has been carried out, up to what stage has it advanced? What difficulties and draw backs if any have been encountered? What plans there are, if any, for further integration?

2. If integration has not been attempted, what considerations have weighed with your State against it?

3. Is suitable personnel for the higher medical administrative posts readily available from amongst those engaged in clinical work or has inducement or pressure had to be used for this purpose?

4. Are the administrative medical officers at the Headquarters offices allowed to engage in clinical or professional work and has such a combination worked without detriment to one or the other?

5. Give the number of personnel of following categories in employment and their pay and allowances :

	Pay Scales	N.P.A. if any	Other allowances if any, other than D.A.	Number employed		
				Under Govt.	Under local bodies	Under other agencies
Director, Health (or Medical) Services.						
Deputy Directors						
Asstt. Directors (Hd. Qrs.)						
Asstt. Directors (Regional if any)						
Specialists						
Civil Surgeon /Distt. Medical Officers.						
Asstt. Surgeon, Grade I						
Asstt. Surgeon, Grade II						
Matrons						
Nursing Sisters						
Sister Tutors						
Staff Nurses						
Pharmacists						
Lab. technicians						
Lab. Assistants						
Lab. Attendents						
Radiographers						
Nursing Orderlies						
Dietitians						
Public Health Nurse						
Medical Social Workers						
Physiotherapists						
Distt. Med. Officers of Health						
Asstt. Health Officer						
Sanitary Inspector						
Lady Health Visitor						
Vaccinators						
Midwife						
Auxiliary nurse midwife						
Dai						
Malaria Inspector						

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6. What is the normal method of filling the posts of various categories given above, and to what extent are higher posts filled by promotion from the lower grades? What facilities/inducements are being given to equip them for posts of higher skill and responsibility?

7. Is private practice allowed to:

(1) Teachers

(2) Specialists

(3) Other medical officers under whole-time Govt. employment?

If so, what are the conditions attached to this concession?

8. In the case of teachers, are all categories of teachers (Professors, Readers, Lecturers, Demonstrators, etc.) allowed private practice or only some? If so, which?

9. Are private and paying wards attached to Govt. General Hospitals and are whole-time medical officers allowed to retain a share of consultation, laboratory and operation fees?

10. Has your Government laid down any schedule of consultation and other fees to be charged by Government medical officers in or outside the hospitals for consultations, etc.? If so the schedule may be given.

11. Are 'pay clinics' run in any Government hospitals in your State? If so, state how these have worked, and additional emoluments, if any to which doctors and other members of the staff are eligible.

12. Does hospital administration continue to be carried out by medical men? What lay assistance is provided to the medical superintendents in the case of larger work? Is there any proposal to provide lay administrators for hospitals?

13. Has any medical hospital administrator in your State been provided opportunities for training in hospital administration?

14. What provision is available for compilation of hospital statistics?

15. Do Almoners' or equivalent services exist in the teaching and other large hospitals of your State?

16. Are Advisory Committees generally attached to **hospitals**?

17. Are there any advisory bodies associated with the Directorate of Health Services? If so, give particulars re : composition, functions, and advantages.

D. Refresher courses

1. Is there any programme of refresher courses for doctors and for nurses and other para-medical personnel in the State? If so, give the following information:—

Doctors.—

(*i*) Name the institutions in which courses are organised?

(*ii*) Are there different types of refresher courses? If so, state their periods of duration and the time of the year in which the courses are held.

(*iii*) Describe briefly the nature of the course in each case, *e.g.*, whether there are formal lectures or only lecture-demonstrations and provision for participation by the trainees in clinical work in the wards and work in the operation theatre.

(*iv*) Are refresher courses available only to those employed in public service, *e. g.*, government employee and/or those in the services of government and of local bodies? Or are such courses available to private practitioners also?

(*v*) Are short-term arrangements provided to specialists working at lower levels of hospitals, *e.g.* District or Sub-divisional headquarters hospitals, to avail themselves of refresher courses in their specialities at higher types of hospitals such as teaching or other large hospitals situated in Divisional or State headquarters?

(*vi*) Are refresher courses compulsory to doctors in government and/or in local body service? If so, at what intervals during their period of service is such training required and what are the special facilities provided to them to attend these courses, *e. g.*, whether the period is considered as duty and whether they receive a special allowance during the period of training: is the undergoing of refresher courses at the prescribed intervals necessary to enable them to receive their annual increments or cross efficiency bars?

(*vii*) If private practitioners are included in the scheme for refresher courses, state whether any fees are received from them or whether they are given any monetary help to encourage them to undergo the training that is provided; give also such information as may be applicable to them under the various items shown above.

2. Give similar information about refresher courses for nurses and for other para-medical personnel, if provision has been made for such courses.

Appendix D-1(b)

PROFORMA FOR THE COLLECTION OF INFORMATION REGARDING MEDICAL RELIEF

A. Urban

1. No. of Hospita (Urban) :

	1958-59	1959-60
(a) Teaching-Government:		
Local Authorities		
Missions		
Others		
(b) Specialised-Government:		
Local Authorities		
Missions		
Others		
(c) General (other and teaching):		
Government		
Local Authorities		
Missions		
Others.		

Total number of Hospitals:—

	1958-59			1959-60		
2. (a) Number of beds in above Hospitals.	Men	Women	Children	Men	Women	Children
(*i*) Teaching hospitals						
(*ii*) Specialised Hospitals						
(*iii*) General Hospitals (other than teaching).						

	1958-59	1959-60
(b) Total number of beds in the State for—		
(*i*) Tuberculosis		
(*ii*) Leprosy		
(*iii*) Mental Diseases		
(*iv*) Infectious diseases		
(*v*) Maternity		
(*vi*) Pediatrics		
(*vii*) Medical		
(*viii*) Surgical		
(*ix*) Orthapaedics		
(*x*) Cancer		
(*xi*) Unspecified		

3. Personnel Employed in Urban Hospitals in 1959-60.

	State Institutions	Local bodies	State Aided & others.
Specialists :—			
(i) Part-time			
(ii) Full-time			

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Doctors:

- (i) Part-time
- (ii) Full-time

Nurses
Pharmacists
Lab. technicians
Radiographers
Physiotherapists
Dietitions

	1958-59	1959-60
4. (i) No. of General dispensaries.		
(ii) No. of T. B. dispensaries/clinics.		
(iii) No. of Leprosy disepenasaries/clinics.		
(iv) No. of M. C. H. dispensaries/clinics.		
(v) No. of Dentistry dispensaries/clinics.		
(vi) No. of Eye dispensaries/clinics.		
Total Number of Urban Dispensaries.		
5. No. of Urban Hospitals.		
(i) at Taluqa/Tehsil Headquarters.		
(ii) at Sub-divisional Sub-quarters.		
(iii) at district head-quarters.		
6. No. of Hospitals providing medical relief through		
(i) Ayurvedic.		
(ii) Unani.		
(iii) Homeopathy.		
(iv) Others.		
7. No. of dispensaries providing medical relief through.		
(i) Ayurvedic.		
(ii) Unani.		
(iii) Homoeopathy.		
(iv) others.		
8. No. of beds in hospitals providing medical relief through.		
(i) Ayurvedic.		
(ii) Unani.		
(iii) Homoeopathy.		
(iv) Other.		
9. Percentage of total expenditure on		
(i) Medical.		
(ii) Health.		

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(B) Rural

	1958-59	1959-60
1. (i) No. of Rural Hospitals.		
(ii) No. of Rural Dispensaries.		
(iii) No. of P. H. C.		
(iv) No. of S. H. C.		
(v) No. of M. C. H. Centres.		
(vi) No. of Family Planning Clinics.		
(vii) No. of C. D./N. E. S. Blocks.		

2. No. of Rural Hospitals run by—
    - (i) Government.
    - (ii) Local Authorities.
    - (iii) Others.

3. No. of Rural Dispensaries under the control of—
    - (i) Civil Surgeon.
    - (ii) District Medical Officers.
    - (iii) District Medical Officers and Health Officers.

4. Total No. of Rural Hospitals and Dispensaries—

	No. of Hospitals	No. of Dispensaries
(i) Modern Medicine.		
(ii) Ayurvedic.		
(iii) Unani.		
(iv) Homoeopathy.		
(v) Others.		

Appendix D-2

PROFORMA FOR COLLECTION OF INFORMATION ON EXPENDITURE ON HEALTH

Year	Total Budget of State	State Budget for Health		State grants to to local bodies for health	Total budget of all local bodies for Medical & Public Health Services	Remarks
		Medical	Public-Health			
1	2	3	4	5	6	7

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N. B.—Please indicate whether col. (5) includes figures in col. (4).

Appendix D-3

ITEMS OF INFORMATION SOUGHT THROUGH LETTERS ADDRESSED TO :

(a) *Plantation Associations & Chief Inspectors of Plantations :*

(1) Number of Tea/Coffee/Rubber etc., plantations with their locations.

(2) Population, Category-wise, in such plantations.

(3) Existing facilities for medical case, environmental sanitation, water-supply, drainage, prevention of communicable diseases (Like cholera, Small-pox, tuberculosis), maternity and child health, and family planning.

(4) Whether all the plantations have made provision according to the scales laid down in the Plantation Act, 1951; if not the reasons for sub-standard facilities in the plantations concerned.

(5) Steps proposed to be taken for bringing the health facilities to the prescribed level ; have any specific schemes been formulated for the Third Five Year Plan period for improvement of health conditions in plantations.

(6) Any other suggestions or comments you may like to make.

(b) *Public Projects :*

(1) Name of the project.

(2) Number of people employed in each project, category-wise ; total approximate population of each project with its proportion likely to continue to be at the site permanently ; nature and extent of housing facilities provided to the workers.

(3) The nature and extent of facilities for medical relief, environmental sanitation, family planning, water-supply, drainage etc.

(4) Are the workers subjected to medical check up before and after employment.

(5) Are there any statutory rules governing the provision of health and medical facilities. If so, extracts of such rules.

(6) Annual health budget of the undertaking for the years 1958-59 to 1960-61 showing the break up between medical and public health services.

(7) What liaison, if any, exists between the health services of the project and the State/Local authority health services.

(8) Are there any schemes under contemplations during the Third Five Year Plan period for improvement of the above mentioned facilities.

(c) *State Governments : Regarding Medical and Health Facilities in Factories :*

(1) The rules made to give effect to the provisions of Sections 10, 12(1) and 76 of the Factories Act, 1948.

(2) The Administrative Machinery and Set-up in regard to these matters; and

(3) Any other comments on the health aspect of the operation of this Act.

(d) *State Governments: Disposal of Factory Effluents:*

(1) Whether any Statutary provision (rules) is in existence in regard to the control of the factory effluents in your State.

(2) What, if any, machinery or organisations has been set up for this purpose.

(3) What further action is proposed to be taken.

(e) *Medical and Professional Councils: All India Health: Legislations:*

Views of the Council regarding any modifications or amendments in the Acts considered necessary for the purpose of removing any difficulties or defects experienced in their implementation, under the conditions now prevailing in the field of health in India.

(f) *Universities conducting Post-graduate Medical Courses:*

(1) Number of men and women students admitted to the various post-graduate medical courses of the university for the years 1948-49 to 1958-59.

(2) Number of men and women students who qualified annually during the years 1948-49 to 1958-59.

(3) Duration of the various post-graduate medical courses.

(g) *Administrative Medical Officers: Regarding Research Institutions in the States:*

(1) The progress made in the implementation as of the recommendations of the Bhore Committee in so far as they relate to the functions of the institute.

(2) The specific programmes which have been developed during the 1st and 2nd Plans.

(3) Proposals for expanding the activities of the institutes with respect to (a) the 3rd plan (b) long terms development, if plans for such extended programme of activity has been under considerations.

Appendix D-4(a)

PROFORMA FOR THE COLLECTION OF INFORMATION FROM A MEDICAL COLLEGE

1. Name
2. Location
3. The area from which students are generally admitted to the college.
4. Controlling authority
   (a) The college
   (b) Associated hospitals

5. Sources of income :	Central Govt.	State Govt.	University Grants Commission	Other Sources.
(*a*) The college				
(*b*) Associated hospitals				

6. Budget and actual expenditure	1948-49 1953-54	1949-50 1954-55	1950-51 1955-56	1951-52 1956-57	1952-53 1957-58
(a) *The college :*					
(i) Budget					
(ii) Actual expenditure					
(b) *Associated hospitals :*					
(i) Budget					
(ii) Actual expenditure					

7. (*a*) *Departments:*

See Appendix I for information to be given regarding individual departments of a medical college.

(b) State whether a social & Preventive Medicine Department exists ; if so

(1) give such information as is possible about the department as shown in Appendix I.

(2) state whether rural and urban field training centres have been established. If so, is the administration of these centres vested in the Department of Social & Preventive Medicine? Describe briefly the staff and functioning of these centres including their training and research programmes.

(3) State the number of hours spent by students in these centres.

(i) during the undergraduate training period, and

(ii) during internship . . .

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8. (*a*) *Admissions :*

(i) State the criteria on the basis of which students are admitted to the college.

(ii) For each of the past five years, give the number of science graduates who were admitted.

(iii) Is the introduction of a "Science group" in the three-year university course desirable from the point of view of securing good candidates for admission to medical colleges ?

(b) *Women students :*

(i) For each of the past five years, give the number of women who were admitted to the college.

(ii) During each of the past five years, give the number of women students who discontinued their medical studies in the college.

(iii) If the information can be collected, state for five successive years

(a) the number of women students who qualified themselves from the college and

(b) the number among them who ceased to practise the profession within a period of five years after qualifying themselves.

(c) *Working days :*

(i) Give the total number of working days in each of the past five years.

(ii) Give separately the average number of working hours in a day for students attending the pre-clinical and clinical departments.

(d) *Undergraduate medical course :*

Year of admission	Number of admissions	Number of those in Col. (2) who passed at the first attempt			Number of those who passed the final professional examination at the 2nd and subsequent attemps	Total of Columns (5) & (6)
		1st professional examination	2nd professional examination	3rd professional examination		
1	2	3	4	5	6	7
1948-49 . .						
1949-50 . .						
1950-51 . .						
1951-52 . .						
1952-53 . .						
1953-54 . .						
1954-55 . .						
1955-56 . .						
1956-57 . .						
1957-58 . .						

NOTE.—Those who are placed in columns 3, 4, 5 and 6 against 1948-49 are to be those who were admitted in 1948-49 and passed the first and other professional examinations in years subsequent to 1948-49. This applies also to succeeding years, 1949-50 etc.

(e) *Post-graduate medical course :*

NOTE.—Give the information asked for below separately for (a) degree cousrses and (b) diploma courses.

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Name of subject	Period of of course	No. of admissions	1948-49 1953-54	1949-50 1954-55	1950-51 1955-56	1951-52 1956-57	1952-53 1957-58
1.							
2.							
3.							
4.							
etc.							
etc.							

(f) *Rate of production of persons with postgraduate qualifications :*

NOTE.—Give the information asked for below separately for (a) degree courses and (b) diploma courses.

	1948-49 1953-54	1949-50 1954-55	1950-51 1955-56	1951-52 1956-57	1952-53 1957-58
(1) No. of those who passed out at first attempt.					
(2) No. of those who passed out at second and subsequent attempts.					

(g) *Extra-curricular activities of students :*

Give information on the following :

- (i) Proportion of students who are member of the N.C.C.
- (ii) Provision for games; proportion of students (men and women separately) who take part in games.
- (iii) Is physical trining compulsory?
- (iv) Provision for other cultural activities and the extent to which they are utilised by students.

9. Give the names of associated teaching hospitals.

10. For teaching hospital and separately for each department of a general hospital in 1958-59

(a) *Bed strength*—(i) sanctioned.

- (ii) average number of beds occupied during the past twelve months.
- (iii) is the standard of clinical beds for a medical student prescribed by the Medical Council of India satisfied?

(b) *Staff*—(i) medical

- (ii) nursing
- (iii) other
- (iv) is the staff position considered satisfactory? If not, indicate deficiencies of a striking character in respect of each of the above three categories.

(c) *Equipment*—Is the equipment considered sufficient—

- (i) in the opinion of the medical officer incharge?
- (ii) according to the standards of the Medicail Council of India?

(d) *Drug supply*—Is the supply of drugs considered sufficient? If not, give examples of glaring deficiencies.

(e) For each of the past five years, give the average diet charge for a patient.

(f) For each of the past five years, give the average cost of medicines for a patient.

11. Recruitment of teachers :

What is the machinery for recruitment? .

(a) For pre-clinical departments .

(b) For clinical departments . . . .

12. Medical College maintained by Government

(a) Are the staff seconded from the general cadre of medical officers and returned preiodically to that cadre?

(i) In pre-clinical departments . .

(ii) In clinical departments . .

(b) Or is there a separate cadre for teachers in the medical colleges maintained by Government ?

(i) In pre-clinical departments . .

(ii) In clinical departments . .

(c) *Scale of emoluments:*

(i) *For those seconded from the general cadre :*

		Scale of pay	Scale of allowance
Pre-clinical departments	Part-time . .		
	Full-time . .		
Clinical departments	Part-time . .		
	Full-time . .		

(ii) *For those who belong to a special cadre for teachers :*

	Scale of pay	Scale of allowance
Pre-clinical departments . . .		
Clinical departments		

13. Non-governmental medical colleges :

Scale of emoluments:

	Scale of pay	Scale of allowance
Pre-clinical departments . . .		
Clinical departments		

14. Library :

(i) Give the numbers of

(a) text books (b) reference books, and

(c) journals currently subscribed ; .

(ii) Are there separate departmental libraries, besides the main library ? If so, similar information as under (i) above for each departmental library ;

(iii) Is the department library independent of, or part of the main college library?

(iv) Have you trained librarians; if so, state their qualifications and emoluments; give also details of other staff.

(v) Average daily number of persons who worked in the library during 1958-59 (students, undergraduates and post-graduate, and teachers).

(vi) State the hours of work for the library.

15. Research :

Give the following information :—

(i) Funds for research from . . .

(a) College funds . . . .

(b) Indian Council of Medical Research

(c) Other sources such as State Medical Research Committees, C.S.I.R. or industrial concerns.

(d) Mention the specific items of research undertaken from funds under each of the above three heads, (a), (b) and (c) for the last 10 years.

(ii) Research publications, by each pre-clinical and clinical department over the 10-year period, 1948-49 to 1957-58.

16. Internship :

(a) Describe how the internship programme has been organised in the different sectors of it relating to medicine, surgery, gynaecology and obstetrics and public health practice.

(b) Indicate the type of work entrusted to a student in each of the above-mentioned sectors of the internship programme.

(c) Indicate the provision made to give professional guidance and help to these trainees such as the special assignment of staff to be in charge of them.

(d) Describe briefly the arrangements made to provide housing accommodation, meals and other amenities for those undergoing internship in hospitals and at health centes.

17. Recommendations of the Medical education Conference, 1955.

(a) Describe briefly the changes introduced in the curriculum of the medical student to implement the recommendations of the Conference. A list of these recommendations is enclosed as appendix II.

(b) Indicate the difficulties, if any, in accepting and bringing into effect these recommendations.

18. What other courses besides medical courses are given at the college, for exampe in—

(a) (i) dentistry (ii) pharmacy (iii) nursing (iv) public health qualifications such a D.P.H. and B.S.Sc. (v) public health engineering and training programmes for (vi) sanitary or public health inspectors and (vii) laboratory technicians.

(b) Describe briefly under each of the above-mentioned subjects (i) to (vii)

(i) length of the course . . . . .

(ii) number of annual addmissions . . .

(iii) the training programme and the facilities avaliable for training.

(iv) the annual number passing out at the end of the course; and

(v) the teachers employed, the number of teachers in each category and thier qualifications and emoluments in each case.

The information asked for in 18(b) under different sub-heads may be given for 10 years 1948-49 to 1957-58 or for as many of these 10 years as possible.

1956 1957 1958

19. (i) Give the average cost of maintenance of a hospital bed.

(ii) Give the average cost of treating a patient in the outpatient department.

Note.—In both cases the average cost should include cost of staff, diet, drugs and other recurring charges, including annual maintenance charges for buildings.

20. For institutions started in 1950 and later give the following information:—

(1) Total cost of construction :

(a) of the college building; . .

(b) of associated hospitals . .

(2) Total cost of equipment :—

(a) furniture . . . .

(i) college . . . .

(ii) associated hospitals . .

(b) equipment other than furniture .

(i) college . . . .

(ii) associated hospitals . .

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Appendix

Name of Medical College.......................... Location.................................

1. Department of.....................................

Available floor space.

Number of rooms for				Distribution of the floor space.		
Area in Sq. ft.	Lectures	Demonstrations or Seminars	Practical Class	Research	Compact on one floor of the college	Distributed over different floors or in separate buildings—indicate distribution of rooms purposes shown in cols. (2), (3), (4) and (5)
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Appendix—*Contd.*

2. *Staff** Name	Designation	Age	Sex	Qualifications	Teaching and Research Experience					
					No. of years of teaching experience			Whether engaged in		
					In the subject	In other medical subjects	Total	(a) teaching only (b) No. of hours of teaching per week	(a) teaching and research (b) No. of hours of teaching per week	(a) research only (b) No. of years of research experience
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

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*NOTE.—Indicate those members of the staff of the department, if any, who are employed on a part-time basis.

3. ***Students:***

(a) No. of under-graduate students in the department 1948-49 1949-50 1950-51 1951-52 1952-53 1953-54 1954-55 1955-56 1956-57 1957-58

(b) No of post-graduate students in the department
1948-49 1949-50 1950-51 1951-52 1952-53 1953-54 1954-55 1955-56 1956-57 1957-58

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4. ***Tutorial Instruction:***

(a) Has provision been made for tutorial instructions ?

(b) If so, state (i) the status of the staff employed on tutorial instruction ;
(ii) No. of students attached to a tutor ;
(iii) No. of hours per week devoted to tutorial classes ;
(iv) the results achieved by tutorial instruction.

Appendix D-5a(i)

QUESTIONNAIRE TO THE PHARMACEUTICAL INDUSTRY :

(Modern Medicine).

A. Manufacture of Drugs :

A.01.0.—What types of drugs do you manufacture—

(a) Basic drugs
  (i) Pharmacopoeial.
  (ii) Proprietary preparations.

(b) Formulations
  (i) Pharmacopoeial
  (ii) Proprietary preparations.

Give in brief the range of different products you manufacture; in particular, give the ratio of pharmacopoeial to non-pharmacopoeial preparations you manufacture, during each of the last five years.

A.02.0.—In deciding to produce and market a proprietary preparation what criteria do you adopt?

A.02.1.—Do you base your decision on the fact that—

(a) similar preparations are marketed by other manufacturers;

(b) there is a particular merit in your preparation, not found in others;

(c) there is no equivalent preparation in the Pharmacopoeia or in the market.

A.02.2.—Do you ensure that the proprietaries marketed by you are therapeutically efficacious?

A.02.3.—If so, how do you ensure this?

A.03.0.—It is often suggested that the market is flooded with proprietaries. What would you suggest to limit such proprietaries only to *ethical and essential products?

A.03.1.—There are many drugs of Indian origin in the Indian Pharmacopoeia. Do you think that, as a result of introducing them in the Pharmacopoeia, their demand has increased. What do you suggest to promote sales of drugs of Indian origin?

A.04.0.—Have you developed any new drugs? If so, which?

A.05.0.—How do you obtain raw materials for the manufacture of your products?

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*Technically, the word 'ethical' means a product which is not adevrtised in the lay press.

A.05.1.—Considering that there is an increasing demand for drugs, can you indicate how your consumption of raw materials has increased from year to year, during the past five years ?

(a) Raw materials of indigenous origin.

(b) Imported raw materials.

A.05.2.—Has the supply of raw materials kept pace with the demand ?

A.06.0.—What is your outturn of finished products, in terms of value, during each of the last five years ?

A.06.1.—Do you think you could have increased your outturn if adequate raw materials were available ? If so, indicate to what extent you could have increased the outturn ?

A.07.0.—Give the total number of persons employed by you under the following heads :—

(a) Office.

(b) Factory-technical, non-technical

(c) Analytical laboratory—technical, non-technical.

(d) Research.

@(e) Field.

A.07.1.—On what qualifications do you insist for the technical staff under (b), (c) and (d) ?

B. **Regulatory Provisions :**

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B.01.0.—What controls do you exercise to ensure the proper quality of your products ?

B.01.1.—Do you test :

(i) all the raw materials for their identity and purity ; and

(ii) finished products before they are released for sale.

B.01.2.—Do you have your own analytical Laboratory ? If not what arrangements do you have for testing the raw materials and finished products ?

B.02.0.—Do you experience any difficulty in obtaining pharmaceutical machinery and apparatus ?

B.02.1.—Do you have to rely entirely on imports for these ?

B.02.2.—What would you suggest to improve the availability of such machinery and apparatus ?

@This relates to detailers. Information under A. 07.1 for detailers is obtained under C. 02.4. The term 'detailer' is explained in the foot-note relating to C. 02.3.

B.03.0.—Are you licensed under the Industries (Development and Regulation) Act ?

B.04.0.—Do you think the working of this Act has been beneficial to the industry ? If so, indicate by specific examples, the benefit so obtained.

B.04.1.—If not beneficial, state in what ways the functioning of the Act has proved detrimental to the industry. Indicate what in your opinion are the means of making improvements.

B.04.2.—Do you ask for technical help and guidance from the Development Wing of the Ministry of Commerce & Industry ?

B.04.3.—If so, have such help and guidance been forthcoming sufficiently to meet your requirements ?

B.05.0.—It is over twelve years since the Drugs Act and the rules under that Act have been brought into force. Do you think that the implementation of the Drugs Act has had a beneficial effect on the industry ?

B.05.1.—If so, indicate by specific examples the benefits so obtained. If not beneficial, state in what ways its functioning has been detrimental to the industry ?

B.05.2.—Indicate what, in your opinion, are the means of making improvements.

C. **Research and Publicity** :

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C.01.0.—Are you engaged in drug research for—

(i) the development of new products ;

(ii) pharmacological and clinical trials ; and

(iii) formulations.

C.01.1.—If so, what is the yearly allocation of funds under each head, (i), (ii) and (iii), above, during each of the past five years ?

C.02.0.—What type/types of publicity do you undertake for promoting the sale of your products ?

(i) Newspaper advertisements ;

(ii) Advertisements in scientific and medical journals ;

(iii) Literature to the medical profession ;

(iv) Supply of free samples to doctors ;

(v) Distribution of calendars, diaries or other articles having a propaganda value.

C.02.1.—Do you supply literature which is adequate to enable the medical profession to assess objectively the merit of your products ?

C.02.2.—Do you indicate the prices of your products in the literature ? If not, are you prepared to do so ?

C.02.3.—Do you employ detailers* to bring to the notice of the medical profession your various products ?

C.02.4.—If so, how many are employed by you and are they qualified persons ? What are the qualifications you have prescribed for them ?

C.02.5.—Is there any training programme for the detailers employed by you ?

C.02.6.—Give, if possible, the expenditure incurred by you under C.02.0(i), (ii), (iii), (iv) and (v) above, during each of the last five years.

D. The Law of Patents and Foreign Collaboration :

D.01.0.—What is your opinion regarding the patent law in India? Do you think that the granting of patents has come in the way of :—

(i) development of the drug industry ;

(ii) a lowering of the cost of drugs.

D.02.0.—Do you think India has sufficient technical talent to exploit commercially patented processes without the aid of know how from outside ?

D.03.0.—Do you collaborate with any foreign manufacturer :

(i) technically ;

(ii) financially ;

If so, give details regarding both.

D.03.1.—Do you think that such collaboration is beneficial to the country ?

E. Miscellaneous :

E.01.0.—Are you engaged in the manufacture of any biological products such as sera, vaccines etc. ? If so, what facilities do you have for standardising these ?

E.02.0.—Do you think control under the Drugs Act over sera and vaccines adequate and effective ? If not, what would you suggest to improve existing controls ?

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*'Detailers' are called medical representatives (they need not be medical men) and are used to contact doctors.

E.03.0.—What in your opinion, should be the relation of the cost of manufacture of a drug (including overheads) to its ultimate cost to the consumer in the case of :

(i) Standard pharmacopoeial drugs ;

(ii) Proprietaries ;

(iii) New drugs.

E.04.0.—Do you think that the cost of drugs to the consumer could be brought down by reducing the cost on publicity and advertisements ?

E.05.0.—What are your views in regard to the enforcement of the provisions of the Drugs and Magic Remedies (Objectionable Advertisements) Act ?

E.05.1.—Have you any suggestions to offer for a better enforcement of the Act ?

E.05.2.—Is the industry suffering any undue inconvenience on account of this legislation ?

E.05.3.—If so, what remedial measures would you suggest.

F. Manufacturers of both modern and indigenous medicines :

F.01.0.—What is the annual outturn, in terms of value, of the products manufactured by you :—

(a) combinations of modern & indigenous drugs ;

(b) pure indigenous drugs.

Give figures for each of the past five years.

Note :— Annual estimates, in terms of value, of the outturn of drugs of modern medicine have been asked for under A 06.0 of this questionnaire.

F.01.2.—Indicate the sources from which, in India and abroad, you get your supplies of crude drugs used in indigenous medicine.

F.01.3.—What are the methods you employ to standardise the products under (a) and(b) of F.01.0. ?

F.01.4.—Is there any research promoted by you in regard to :—

(a) the standardisation of your products of combined modern and indigenous drugs ?

(b) the standardisation of pure indigenous drugs ;

(i) the crude drug ;

(ii) the finished product.

F.02.0.—Are there any legal provisions to regulate the manufacture, storage and sale of (a) drugs used in indigenous medicine and (b) combinations of drugs of modern and indigenous medicines ?

F.02.1.—If not, do you consider appropriate legislative and administrative action necessary to achieve such regulation ? If so, can you suggest such practical steps as can be taken without delay towards promoting regulation at least to some extent ?

G. Sale in internal & external markets:

G.01.0.—Give, in terms of value, your annual sale figures, for each of the last five years :

Market	Modern drugs	Combined drugs of modern and indigenous medicine	Drugs of indigenous medicine
(1)	(2)	(3)	(4)
Internal			
Foreign			

G.01.1.—Describe briefly the steps you take to promote sales of drugs under columns (2), (3) and (4) of G.01.0. separately for internal and external markets.

Appendix D-5a(ii)

QUESTIONNAIRE TO THE MEDICAL AND PHARMACEUTICAL PROFESSIONS.

A. Drugs dressings, instruments and appliances—their availability, quality and cost:

A.01.0.—Do you experience any difficulty in getting an adequate supply of drugs.

(i) imported ;

(ii) of indigenous origin ;

(iii) made locally from imported raw materials ?

A.01.1.—Do you think that import restrictions on drugs in ready packaged form have had any adverse effect on the treatment of disease ?

A.02.0.—Are you satisfied with the quality of drugs available in the country.

(i) imported,

(ii) of indigenous origin,

(iii) made locally from imported raw materials ?

A.02.1.—Are you satisfied with the quality of bilogical products such as sera, vaccines etc., produced in the country ?

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A.02.2.—Do you have any suggestions to improve the quality of drugs manufactured in the country ?

A.02.3.—Do you have any liaison with the drug industry ?

A.02.4.—Have you visited any of the drug manufacturing factories in the country ? If so, what is your opinion of these ?

A.02.5.—Are you aware that the Drugs Act is in force in the country since 1947 ?

A.02.6.—If so, do you think it is being properly enforced ?

A.02.7.—Has it had any effect in maintaining and improving the standards of drugs ?

A.02.8.—Do you have any suggestions to improve the enforcement of the Act and the rules under it ?

A.02.9.—Have you in your practice come across any cases of spurious drugs ? If so, can you give specific instances ?

A.03.0.—Are you aware of the prevailing prices of drugs and do you keep that knowledge in mind while writing prescriptions for your patients ?

A.03.1.—Do you ordinarily prescribe drugs under their proprietary names ?

A.03.2.—If information were readily available to you that certain drugs sold under a proprietary name are also pharmacopoeial drugs, would you prescribe such drugs only under their pharmacopoeial name ?

A.03.3.—If the cost of any particular drug is known to you to be high, would you consider the feasibility of prescribing a less expensive alternative, if information about such alternatives were readily available to you ?

A.03.4.—Have you access to information regarding different substitute for the same drug ?

A.04.0.—Do you have any difficulty in obtaining :

(i) Surgical dressings.

(ii) Sterilised sutures.

(iii) Instruments, if so, which type ?

(iv) Appliances—if so, which type ?

(v) Diagnostic agents.

(vi) Dental goods.

(vii) X-ray films.

(viii) X-ray equipment.

(ix) Laboratory reagents.

(x) Any other item ?

A.04.1.—Of the above items which do you obtain from sources of indigenous manufacture ?

A.04.2.—Are you satisfied with the quality of the articles under A.04.0. when obtained from indigenous manufacture ; if not, quote specific examples ?

B. **New Drugs :**

B.01.0.—Drug research is proceeding at a rapid pace. New drugs are introduced in therapy especially by pharmaceutical firms abroad, in prescribing such new drugs on which sources do you depend for information regarding their therapeutic efficacy and absence of untoward effects :—

(i) Literature published in scientific and medical journals.

(ii) Consultants attached to hospitals.

(iii) Literature sent by manufacturers.

(iv) Advertisements in medical and scientific journals.

(v) Information obtained from representatives of manufacturers.

(vi) Lay press.

(vii) Hearsay ?

B.01.1.—Do you subscribe to any medical or scientific journals ?

B.01.2.—If so, do those journals give you sufficient information about new drugs ? Do you have adequate leisure to study the journals ?

B.01.3.—Do you think that dissemination of information regarding drugs by representatives of manufacturing houses is a useful means of acquainting the medical profession with the true values of drugs ?

B.01.4.—From your experience, are such representatives properly trained for the job they are doing ?

B.01.5.—Do you think that there is 'Pressure advertising' of drugs through the press, personal contracts and other measures by the manufacturers of drugs ? If so, is it desirable in the interests of the medical profession and of patients ? If not desirable, can you suggest such lines of advertisement as you deem likely to limit the scope of the ill-effects of 'pressure advertisement' ?

B.02.0.—Do you think that it would be advantageous to have an agency to give an objective assessment of new drugs ? If so, what type of agency would you prefer.

(i) governmental or

(ii) non-governmental ?

B.02.2.—Considering that drug research is proceeding at a rapid pace, do you think that it would be beneficial to the profession to have short refresher courses on newer therapeutics ?

B.02.3.—Considering that modern drug research tends to achieve specificity of drugs in relation to disease, do you think that the tendency to prescribe polypharmaceutical preparations should be discouraged ?

B.02.4.—If so, what would you suggest to achieve this end ?

C. Indian Pharmacopoeial drugs :

C.01.0.—Are you aware that there is a National Pharmacopoeia called the Indian Pharmacopoeia ?

C.01.1.—Is so, do you know that many drugs of Indian origin are included in it ?

C.01.2.—Do you prescribe any drugs included in the Indian Pharmacopoeia ?

C.01.3.—What do you think should be the methods to be adopted to make the Indian Pharmacopoeia known to the medical profession?

D. National Formulary :

D.01.0.—A National Formulary of India is now in print ; the Formulary contains all the essential formulations of drugs of the Indian and other Pharmacopoeias. Are you prepared to limit your prescriptions only to those included in the National Formulary ?

D.01.1.—If so, are you prepared to prescribe such drugs only under the names given in the Formulary ?

E. Self Medication and Excessive Medication :

E.01.0.—Do you consider that self-medication is on the increase ? If so, would you suggest that—

(i) it should be stopped.

(ii) limited to only minor ailments ?

E.02.1.—Do you think that there is excessive medication, in particular of antibiotics, sulpha drugs, vitamins etc.?

E.02.2.—If so, what would you suggest to limit medication to the desirable minimum ?

E.02.3.—Under the provisions of the Drugs Act, drugs such as antibiotics, sulpha drugs, can be sold only under the prescription of a registered medical practitioner.

Do you consider that this has checked the abuse of such drugs?

E.02.4.—If not, what would you suggest to check their abuse ?

F. Pharmacy Act :

F.01.0.—Are you aware that the Pharmacy Act is in operation in the country ?

F.01.1.—Do you have a qualified pharmacist working in your pharmacy ?

F.01.2.—If you have had experience of both qualified and unqualified pharmacists, can you indicate briefly differences in the quality of service, if any, between the two types of pharmacists ?

F.01.3.—Have the provisions of the Pharmacy Act resulted in raising the standards of training of pharmacists ?

F.01.4.—Do you think the standards prescribed for the training of pharmacists under the Pharmacy Act are sufficient or should they be upgraded ?

F.01.5.—In view of the large number of trained personnel required for the general medical care programme for the community, do you think it a reasonable and practical suggestion that, in the case of smaller institutions especially in the rural areas, the same person should be enabled to combine in himself the functions of a pharmacist and of a laboratory technician and that the training programme should be prepared accordingly ?

F.01.6.—If so, what suggestions do you make for such a combined training programme ?

F.01.7.—The view is often expressed that the dispensing the supply of drugs to patients should be left to the pharmacists and that doctor should confine themselves to the examination and diagnosis of patients and prescribing treatment for them. Do you subscribe to this view ?

F.01.8.—It is understood that some doctors keep consulting rooms in chemists' shops and see patients there. Is this procedure likely to lead to over-prescribing of drugs ?

F.01.9.—It is often said that pharmacists, qualified and unqualified, practise as doctors in many cases. Does your experience substantiate this statement? If so, what remedial measures can you suggest?

G. Pharmaceutical service for the country:

G.01.1.—A view is often expressed that there is need for the building up of a sound pharmaceutical service. Do you support this view?

G.01.2.—If so, do you think that there are enough qualified pharmacists to run—

(i) Hospital pharmacies.

(ii) City pharmacies.

(iii) Town pharmacies.

(iv) Rural dispensaries?

What would you suggest to improve the quality of pharmacists?

H. Drug Addition:

H.01.0.—Are you aware of the risk of addition attendant on the use and misuse of addiction producing drugs such as morphine, pethidine?

H.01.1.—Do you think there is adequate control to check the misuse of such things?

H.01.2.—Have you come across any cases of drug addiction?

H.01.3.—If so, which sections of the community are, in your opinion, more prone to addiction.

(i) Business community.

(ii) Workers.

(iii) Professional people.

  (a) Lawyers.

  (b) Doctors.

  (c) Nurses.

  (d) Engineers.

  (e) Chemists.

  (f) Others?

H.01.4.—Have you come across any cases of juvenile addiction?

H.01.5.—In your experience, what are the 'addiction drugs' you have found in use by the people; give the types of such drugs used by persons under (i), (ii) and (iii) of.

H.01.6.—Do you think addiction to drugs should be made a penal offence ?

H.01.7.—Are you subject to any restrictions regarding the use of addiction producing drugs—

(i) Under the Dangerous Drugs Act, 1930.

(ii) Under the Drugs Act, 1940 ?

If so, are you conforming to the requirements under those Acts ?

H.01.8.—Considering the danger of indiscriminate use of such drugs, do you think that methods designed to impose reasonable restrictions on their use would be justified ? If so, suggest such methods as appear to you to be suitable and, at the same time, feasible.

H.01.9.—Do you get adequate information about drugs liable to produce addiction?

H.01.10.—If not, would you suggest that such information should be provided to the medical profession by a governmental agency ?

I. Miscellaneous :

I.01.0. Have you any interest in any drug manufacturing concern of concerns ?

I.01.1.—Do you think it is desirable that members of the medical profession should have association with drug manufacturing concerns involving personal profit, except as employees on the pay-rolls of those concerns ?

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Appendix D-5a(iii)

QUESTIONNAIRE TO THE HEADS OF HEALTH DEPARTMENTS IN THE STATES

A. Modern Medicine :

A.01.0.—Of the total population of the State what proportion is covered by the services rendered by the :—

(a) Government medical institutions ;

(b) Local body institutions ;

(c) missionary institutions ; and

(d) other institutions ?

A.01.1.—What is the annual budget for the maintenance of existing hospitals and dispensaries under the Government for each of the last five years ?

A.01.2.—What proportion of the budget under A.01.1 is spent on (a) institutions in urban areas (Headquarters of the State, a Division, a District, a Subdivisional or Taluk head-quarters) and (b) in rural areas, respectively ?

A.01.3.—What is the yearly sum spent, from each budget amount under A.01.1, on (a) drugs and (b) other medical supplies equipment and appliances ?

A.01.4.—Have the budget provisions under (a) and (b) of A.01.3 been found sufficient to meet the needs of patients ? If not, can estimates be given of the proportions of patients whose needs are met under (a) and (b) respectively ?

A.01.5.—What additional budget allotments are necessary under (a) and (b) respectively to meet the needs of all patients ?

B. **Supply of Drugs:**

B.01.0.—Are you experiencing any difficulty in getting an adequate supply of drugs ?

B.01.1.—If so, state whether it is due to (a) import restrictions (b) inadequacy of indigenous production or (c) defective distribution.

B.01.2.—How do you obtain your drugs through :

(i) direct purchase,
(ii) purchase through D. G., S. & D. of the Government of India, or
(iii) the Medical Store Depot of the Government of India ?

B.01.3.—Do you think that there is any advantage in getting your supplies through the Medical Store Depot ?

B.01.4.—Does the supply of drugs through the Medical Store Depot work satisfactorily and expeditiously enough to meet your requirements ?

B.01.5.—If not, what improvements would you suggest to the existing procedures ?

B.01.6.—Are there any differences in price by (a) getting your supplies through the Medical Store Depot or getting it through the other two channels, (i) and (ii) mentioned in B.01.2.

B.01.7.—If obtained from the Medical Stores Depot is there any advantage in price in respect of :—

(i) drugs manufactured by the Depot ;
(ii) drugs purchased by the Depot and supplied to you in comparison with what you get from the local market by direct purchase ?

B.01.8.—State your views regarding the quality of drugs when obtained on the lines indicated in B.01.6.

B.01.9.—Do you have any agency for checking and keeping a watch over the prices of Drugs.

B.01.10.—Are the prices of drugs going up or coming down? Indicate by specific examples from among the more important drugs the trend in each case, during the past two years.

B.01.11.—Are statistics being maintained of drugs consumed in the State hospitals and dispensaries? If so, indicate the machinery for doing so.

B.01.12.—How do you forecast your requirements of various drugs from year to year?

B.01.13.—Do you keep a watch over increases of the consumption of drugs? Is this rise due to:

(a) an increase in the number of patients,

(b) greater utilisation of drugs by individual patients; or

(c) both.

B.01.14.—Are health programmes in your State drawn up in advance and are suitable arrangements made to get in time all the requisites and, in particular,

(a) the necessary drugs; and

(b) medical supplies, equipment and appliances?

B.01.15.—Has any of the health programmes in your State had to be kept in abeyance for want of—

(a) drugs; and

(b) medical supplies, equipment and appliances?

B.01.16.—If so, give particulars.

B.01.17.—Do you make provision in respect of:—

(a) drugs; and

(b) medical supplies, equipment and appliances, to meet emergencies like floods, famines and earthquakes?

C. Pharmacies:

C.01.0.—Has an attempt been made to enlarge the scope of hospital pharmacies with a view to producing sterile solutions, injectibles, dressing etc., so as to reduce the cost of drugs? If not, is any such proposal under consideration?

C.01.1.—Are there adequate qualified pharmacists to man hospital pharmacies?

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C.01.2.—Have you made arrangements to train pharmacists to meet the needs of :—

(i) pharmacies in government institutions including hospitals dispensaries, and primary health centres ; and

(ii) private pharmacies which compound medicine for the general public on prescriptions of doctors ?

C.01.3.—In view of the large number of trained personnel required for expanding the general medical care programme for the community, do you think it a reasonable and practicable suggestion that, in the case of smaller institutions especially in the rural areas, the same person should be enabled to combine in himself the functions of a pharmacist and of a laboratory technician, and that the training programme should be prepared accordingly ?

C.01.4.—If so, what suggestions do you make for such a combined training programme ?

D. Quality of Drugs :

D.01.0.—Are you satisfied with the standards of quality and purity of the drugs available to you ?

D.01.1.—Are you satisfied that the provisions of the Drugs Act, 1940, and of its Rules are being properly enforced in your State ?

D.01.2.—Do you have a whole-time officer in charge of the Drugs Control Department ? If so, what are his qualifications ?

D.01.3.—How many Inspectors under the Drugs Act are employed in your State ? Give the number of samples taken annually during the past five years, if possible, under different categories of drugs. State for each year, under each category, the number of samples found to be up to the prescribed standard.

D.01.4.—Are there among them persons competent through adequate experience, to inspect manufacturing premises and processes of manufacture ?

D.01.5.—Does your State have a laboratory/laboratories to test samples of drugs ?

D.01.6.—Have you appointed a Government Analyst/Analysts under the Drugs Act ?

D.01.7.—Have you come across cases of (i) manufacture ; and (ii) sale of spurious and/or substandard drugs in your State ?

D.01.8.—If so, give particulars of such cases.

D.01.9.—What measures are you taking to detect cases of manufacture and sale of spurious drugs and what steps are being taken to stop such manufacture and sale ?

E. **Medication and Addition :**

E.01.0.—Do you think that there is excessive medication in your State especially of drugs such as antibiotics, sulpha drugs and vitamins ?

E.01.1.—Has the requirement under the provisions of the Drugs Act that drugs such as antibiotics and sulpha drugs can be sold only under the prescription of a registered medical practitioner any effect on the control of excessive medication ?

E.01.2.—If not, what steps would you suggest to improve the situation ?

E.02.0.—Have you had any cases reported to you about :—

(i) sensitisation to penicillin ; and

(ii) resistance to penicillin or any other antibiotic ?

E.02.1.—Have you had reports of any serious or fatal cases due to sensitisation to penicillin ?

E.02.2.—If so, quote specific examples.

E.03.0.—Do you have any effective controls over addiction producing drugs in respect of :—

(i) their manufacture ;

(ii) their sale ; and

(iii) their use ?

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E.03.1.—Have instances of drug addiction been reported to you ?

E.03.2.—Have cases of addiction been brought to your notice in the State in sufficient numbers in respect of ;

(i) Opium ; (ii) Cannabis Indica ; (iii) Morphine ; (iv) Pethidine ; and (v) other synthetic narcotic drugs ?

E.03.3.—Do you have any system of registration of addicts ?

E.03.4.—Do you have facilities for the treatment and rehabilitation of addicts ? What types of treatment have been provided for them :—

(i) institutional ; (ii) domiciliary ; and (iii) through specially organised travelling teams of doctors and ancillary personnel ?

E.03.5.—Do you think that addiction should be made a penal offence ?

E.03.6.—Do you have adequate control over the use of narcotic drugs in hospitals and dispensaries ?

E.03.7.—Is the State Government implementing or proposing to implement the recommendations of the Narcotic Conference held in Hyderabad in March, 1959 ?

E.03.8.—In particular, have arrangements been made for the issue of specific prescription forms for narcotic drugs ?

E.03.9.—Does the necessary agency exist to assess the requirements of narcotic drugs in your State ?

F. **Miscellaneous :**

F.01.0.—Describe briefly the arrangements that exist in the State for transfusion services, including those for the supply of whole blood and of plasma respectively.

F.01.2.—Are there any arrangements for the preparation of blood-plasma and its factions ?

F.01.3.—Are these arrangements sufficient to meet the needs of the State ; if not, are there proposals for enlargement of the necessary facilities ?

F.02.0.—Do you have any immunising programme for children against Tetanus, Diphtheria and Whooping Cough ?

F.02.1.—If so, state what your yearly requirements of these different vaccines are ?

F.03.0.—Do you have any difficulty in obtaining :—

(i) surgical dressings, (ii) sterilised sutures, (iii) instruments—if so, which type, (iv) appliances—if so, which type, (v) diagnostic agents, (vi) dental goods, (vii) X-ray equipment, (viii) X-ray films, (ix) laboratory reagents, or (x) any other item ?

F.03.1.—Which of the above do you obtain from indigenous manufacture ?

F.03.2.—Are you satisfied with the quality and price of such products of indigenous manufacture ?

F.03.3.—Give a list of the firms in the State, which are engaged in the manufacture of the articles mentioned in each of the heads (i) to (x) under F.03.0 ; state, if possible, the annual outturn in value in respect of each firm and each item of manufacture.

G. **Modern & Indigenous Medicine :**

G.01.0.—Does the State own any factory or factories for the manufacture of ; (a) drugs of modern medicine, (b) combinations of drugs of indigenous and modern medicine, (c) drugs of indigenous medicine.

G.01.1.—If so, give the name of the products separately under (a), (b) and (c) of G.01.0 ; state the annual outturn in terms of value of each product and the annual sale.

Give separate figures for each of the past five years.

G.01.2.—Are there any libraries or museums in your State that will be helpful in the identification and full concept of the indigenous medicinal herbs ?

G.01.3.—Are there any stores private or state-owned where sufficient amount of raw drugs of best quality can be easily had ?

G.01.4.—Are there any endeavours made in your State to cultivate and also to improve the qualities of medicinal herbs that generally grow in the State ?

G.01.5.—Are there any researches done in your State on indigenous medicinal herbs.

Appendix D-5(b)

QUESTIONNAIRE TO ELICIT INFORMATION REGARDING THE PRODUCTION OF HOSPITAL APPLIANCES, INSTRUMENTS AND OTHER REQUISITES FROM MANUFACTURERS OF SURGICAL INSTRUMENTS AND ALLIED ITEMS.

1. Give a list of items manufactured by your firm. Please also give your present production capacity and your annual turn-over in Rupees for the last five years where relevant to your firm.

2. Do you carry out all stages of manufacture in your factory ? If not, what are those stages including availability of components in which you depend on other sources ?

3. Give names of leading institutions to whom your products have been supplied for use/trial. Furnish extracts from reports, if any.

4. Give specifications of your products, including specifications of raw materials, such as stainless steel, carbon steel with percentage of carbon content. What are the sources of your raw materials and how are satisfied with their quality ? Have you any difficulty in obtaining them ?

5. How do you ensure quality control of products manufactured by you ?

6. (i) How do you keep in touch with the latest development in the field of manufacture of surgical instruments and allied items ?

(ii) Have you any research cell for evolving or introducing new techniques in their manufacture or for expanding the range of manufacture ?

7. What standards are followed in respect of products manufactured by you ?

8. How many trained Technical personnel are there in your firm/factory ? What are their qualifications ?

9. Have you any facilities for training recruits in the manufacture of your specialised items ? If so, how many can be trained at a time and what is the duration of training ?

10. What are your views regarding the present condition of this industry ? State your main difficulties in the way of the development of this branch of the industry and give your views and suggestions as to how best they can be overcome.

11. What plans, if any, do you have for further expansion ?

12. How is your firm financed ? What is the invested capital ? Have you any liaison with the appropriate Government department of your State ?

13. Do you export any of your items, if so, what is the annual value of such total exports ?

Appendix D-6(a)

PROFORMA FOR THE COLLECTION OF INFORMATION FROM A MEDICAL COLLEGE OF INDIGENOUS MEDICINE OR HOMOEOPATHY.

1. Name

2. Location

3. The area from which students are generally admitted to the college.

4. (a) Is the college affiliated to a University ? If so, to which university ?

   (b) Does the college provide a diploma course, a degree course or both ?

   (c) If not affiliated to a university, give the name of the authority to which it is affiliated as the body responsible for conducting professional examinations and for granting the qualification or qualifications for which the college prepares students.

(d) State the designation of the degree or diploma that is awarded.

(e) What is the duration of the course or courses that are offered at the college an state the subjects that are taught in each course.

5. Controlling authority

(a) The college

(b) Associated hospitals

6. Sources of income:

	Central Govt.	State Govt.	University Grants Commission	Other Sources
(a) The college				
(b) Associated hospitals				

7. Budget and actual expenditure

1948-49 1949-50 1950-51 1951-52 1952-53

1953-54 1954-55 1955-56 1957-58

(a) *The College*

(i) Budget

(ii) Actual expenditure

(b) *Associated hospitals*

(i) Budget

(ii) Actual expenditure

8. Departments

See appendix for information to be given regarding individual departments of the medical college.

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9. (a) Admission.

(i) State the criteria on the basis of which students are admitted to the college; *e.g.*, the minimum standard of general education for admission; special requirements, if any, such as knowledge of Sanskrit, etc.

(b) Women students

(i) For each of the past five years, give the number of women who were admitted to the college.

(ii) During each of the past five years, give the number of women students who discontinued their medical studies during the period of training.

(iii) If the information can be collected, state for five successive years

(a) the number of women students who qualified themselves from the college and

(b) the number among them who ceased to practise the profession within a period of five years after qualifying themselves.

(c) Working days

(i) Give the total number of working days in each of the past five years.

(ii) Give separately the average number of working hours in a day for students attending the pre-clinical and clinical departments,

(d) Undergraduate medical course

Year of admission	Number of admissions	Number of those in Col. (2) who passed at the first attempt			Number of those who passed the final professional examination at the 2nd and subsequent attempts	Total of columns (5) & (6)
		1st professional examination	2nd professional examination	3rd professional examination		
1	2	3	4	5	6	7
1948-49						
1949-50						
1950-51						
1951-52						
1952-53						
1953-54						
1954-55						
1955-56						
1956-57						
1957-58						

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NOTE.—Those who are placed in columns 3,4,5 and 6 against 1948-49 are to be those who were admitted in 1948-49 and passed the first and other professional examinations in years subsequent to 1948-49. This applies also to succeeding years, 1949-50 etc.

(e) Postgraduate medical course

(i) Are there any postgraduate courses in the college ?

(ii) If so, give the information asked for below separately for (a) degree courses and (b) diploma courses.

Name of of subject	Period of course	No. of admi-sions	1948-49 1953-54	1949-50 1954-55	1950-51 1955-56	1951-52 1956-57	1952-53 1957-58
1.							
2.							
3.							
4.							
etc.							

(f) Rate of production of persons with postgraduate qualifications.

NOTE.—Give the information asked for below separately for (a) degree courses and (b) dipioma courses.

	1948-49 1953-54	1949-50 1954-55	1950-51 1955-56	1951-52 1956-57	1952-53 1957-58
(1) No. of those who passed out at first attempt.					
(2) No. of those who passed out at second and subsequent attempts.					

(g) Extra-curricular activities of students

Give the information on the following :

(i) Proportion of students who are members of the N.C.C.

(ii) Provision for games; proportion of students (men and women separately) who take part in games.

(iii) Is physical training compulsory ?

(iv) Provision for other cultural activities and the extent to which they are utilised by students.

10. Give the names of associated teaching hospitals.

11. For each hospital and separately for each department of a general hospital in 1958-59.

(a) *Bed strength* :

(i) sanctioned

(ii) average number of beds occupied during the past twelve months.

(iii) the maximum number of occupied beds in any one day in the year.

(b) *Staff* :

(i) medical

(ii) nursing

(iii) other

(iv) is the staff, position considered satisfactory ? If not, indicate deficiencies of striking character in respect of each of the above three categories.

(c) *Equipment*—Is the equipment considered sufficient in the opinion of the medical officer in charge

(d) *Drug supply*—Is the supply of drugs considered sufficient ? If not, give examples of glaring deficiencies.

(e) For each of the past five years, give the average diet charge for a patient.

(f) For each of the past five years, give the average cost of medicines for a patient.

12. Recruitment of teachers.

What is the machinery for recruitment ?

(a) for pre-clinical departments.

(b) for clinical departments.

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13. Medical college for Indigenous Medicine and Homoeopathy maintained by Government

(a) Are the staff seconded from the general cadre of medical officers and returned periodically to that cadre ?

(i) In pre-clinical departments.

(ii) In clinical departments.

Or (b) is there a separate cadre for teachers in these types of medical colleges maintained by Government ?

(i) In pre-clinical departments

(ii) In clinical departments.

(c) Scale of emoluments

(i) *For those seconded from the general cadre :*

		Scale of pay	Scale of allowance
Pre-clinical departments	Part-time		
	Full time		
Clinical departments	Part-time		
	Full-time		

(ii) *For those who belong to a special cadre for teachers :*

	Scale of Pay	Scale of allowance
Pre-clinical departments		
Clinical departments		

14. Non-governmental medical college for Indigenous Medicine and Homoeopathy

	Scale of emoluments	
	Scale of pay	Scale of allowance
Pre-clinical departments		
Clinical departments		

15. Library

(i) Give the number of :

(a) Text books, (b) reference books, and (c) journals currently subscribed.

(ii) Are there separate departmental libraries besides the main library ? If so, similar information as under (i) above for each departmental library.

(iii) Is the department library independent of, or part of the main college library ?

(iv) Have you trained librarians; if so, state their qualifications and emoluments; give also details of other staff ?

(v) Average daily number of persons who worked in the library during 1958-59 (students, undergraduate and postgraduate, and teachers).

(vi) State the hours of work for the library.

16. Research :

Give the following information :—

(i) Funds for research from :

(a) College funds.

(b) Health Ministry, Government of India.

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(c) Indian Council of Medical Research.

(d) Other sources such as State Medical Research Committees, C.S.I.R. or industrial concerns.

(e) Mention the specific items of research undertaken from funds under each of the above four heads, (a), (b), (c) and (d) for the last 10 years.

(ii) research publications, by each pre-clinical and clinical department over the 10-years period, 1948-49 to 1957-58.

17. Internship

(i) Is there an internship programme ?

(ii) If so :

(a) Describe how the internship programme has been organised in the different sectors of it relating to medicine, surgery, gynaecology and obstetrics and public health practice.

(b) Indicate the type of work entrusted to a student in each of the above-mentioned sectors of the internship programme.

(c) Indicate the provision made to give professional guidance and help to these trainees such as the special assignment of staff to be in charge of them.

(d) Describe briefly the arrangements made to provide housing accommodation, meals and other amenities for those undergoing internship in hospitals and at health centres.

	1956	1957	1958
18. (i) Give the average cost of maintenance of a hospital bed.			
(ii) Give the average cost of treating a patient in the outpatient department.			

NOTE.—In both cases the average cost should include cost of staff, diet, drugs and other recurring charges, including annual maintenance charges for buildings.

19. For institutions started in 1950 and later.

Give the following information :—

(1) Total cost of construction :
  (a) of the college building;
  (b) of associated hospitals

(2) Total cost of equipment :—
  (a) furniture
    (1) college
    (2) associated hospitals :
  (b) equipment other than furniture
    (1) college
    (2) associated hospitals.

20. State the number of hours devoted to training in :—

(a) subjects of indigenous medicine or homoeopaty and

(b) subjects of modern medicine.

APPENDIX D-6(b)

PROFORMA FOR THE COLLECTION OF INFORMATION FROM A MEDICAL COLLEGE OF INDIGENOUS MEDICINE OR HOMOEOPATHY

1. Name of the college.		
2. Budget and actual expenditure of the college.	1958-59	1959-60
(i) Budget.		
(ii) Actual expenditure.		
3. Budget and actual expenditure of Associated Hospitals.	1958-59	1959-60
(i) Budget.		
(ii) Actual expenditure.		
4. No. of Associated Hospitals.	1958-59	1959-60
5. (i) Admissions to undergraduate medical courses.	1958-59	1959-60
(ii) Admissions to Postgraduate courses.		
Total Admissions.		
6. No. of Science-Graduate admitted.	1958-59	1959-60
7. No. of Women students admitted.	1958-59	1959-60
8. No. of students passing.	1958-59	1959-60
(i) Undergraduate medical courses.		
(ii) Post-graduate medical courses.		
9. No. of Science Graduate qualified.	1958-59	1959-60
10. No. of Women students qualified.	1958-59	1959-60
11. Total No. of working days for the years.	1958-59	1959-60
12. Average No. of working hours in a day.	1958-59	1959-60
13. No. of students qualifying the under graduate medical course at	1958-59	1959-60
(i) 1st attempt.		
(ii) 2nd and subsequent attempts.		
14. No. of students qualifying the postgraduate medical courses at	1958-59	1959-60
(i) 1st attempt.		
(ii) 2nd and subsequent attempts.		
15. Bed strength sanctioned for such associated hospital.	1958-59	1959-60
16. Beds occupied for each associated hospital.	1958-59	1959-60
17. Medical staff for each associated hospital.	1958-59	1959-60
18. Nursing staff for each associated hospital.	1958-59	1959-60
19. Other staff for each associated hospital.	1958-59	1959-60
20. Average diet charge for a patient per day.	1958-59	1959-60

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21. Average cost of medicine for a patient per day. 1958-59 1959-60

22. Average cost of maintenance for hospital bed per year. 1958-59 1959-60

23. Average cost of treating a patient in the out patient department per day. 1958-59 1959-60

24. Average daily number of persons who worked in the library during the years. 1958-59 1959-60

(i) Under-graduate.

(ii) Post-graduate.

(iii) Teachers.

GIPN—S1—2 M. of Health/62—11-10-62—6500